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SYDENHAM SOCIETY

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LONDON

MDCCCLVI.

A TREATISE

ON THE

DISEASES OF THE BREAST

AND

MAMMARY REGION.

BY

A. VELPEAU,

MEMBRE DE L'INSTITUT (ACADEMIE DES SCIENCES) ET DE L'ACADEMIE IMPERIALE DE MEDECINE;
PROFESSEUR A LA FACULTE DE MEDECINE DE PARIS;
CHIRURGIEN DE L'HÔPITAL DE LA CHARITE, ETC.

TRANSLATED FROM THE FRENCH

BY

MITCHELL HENRY,

FELLOW, BY EXAMINATION, OF THE ROYAL COLLEGE OF SURGEONS;
ASSISTANT-SURGEON AND LECTURER ON MORBID ANATOMY AT THE MIDDLESEX HOSPITAL;
SURGEON TO THE NORTH LONDON INFIRMARY FOR THE DISEASES OF THE EYE.

LONDON:

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EDITOR'S PREFACE.

M. Velpeau's 'Treatise on the Diseases of the Breast' belongs to a necessarily small class of works, the chief value of which lies in their practical character. It contains the results of the experience of a man whose opportunities for observation have been immense, and whose diligence in the use of them is familiar to all professional readers. It can fall to the lot of but few to have seen so much, and it is not in the power of many to have observed so faithfully. Whatever advances, therefore, may be made in theoretical medical and surgical knowledge, the facts upon which this work is based can never lose their value. It represents the views entertained by a large class of the older surgeons, who, while they have not, on the one hand, remained insensible to the value of modern microscopical researches, have, on the other, hesitated to accord entire belief to doctrines which tend to overturn, on what they consider insufficient grounds, the experience derived from years of observation. In executing the task which, as Editor, the Council of the Sydenham Society has been pleased to confide to me, I have endeavoured, to the best of my ability, to preserve the peculiarities in the style of the original, without wholly sacrificing the comfort of the English reader. If he should be inclined to find fault with the construction of sentences that too unmistakeably bear upon them the marks of their foreign origin, I would beg him to

remember that, whatever ideal standard of perfection he may propose for a translation, in practice the limit is almost necessarily confined to a faithful rendering of the original, and leaves but little scope for the graces of style.

It is not for me to express any opinion as to the value of this Treatise; but, as a key to certain peculiarities that may strike the reader, it may be observed that M. Velpeau is a great Clinical teacher; and as such he appears to exercise a license in his writings which would pass unnoticed in the lecture theatre, although sure to attract attention in a written document. Some of his statements seem hardly reconcileable with each other; yet it is evident that this is less inherent in the statements themselves than in the mode of their expression. The lecturer, when engaged in delivering a clinical discourse, often makes an assertion which he is afterwards induced to modify, though not altogether to contradict, by the sudden recollection of some point in the history of a case that for the moment had escaped his memory. In the class-room such a circumstance is either unimportant or may even add spirit and life to his instructions; but when reduced to the terms of a written proposition, this license is apt to produce a very opposite effect. If I may be allowed to characterise M. Velpeau's composition, I should be inclined to call it a clinical style; and as such it must be judged and estimated.

It will be seen that upon many points of importance I have considered it my duty to express dissent from claims of priority and the like, which, if allowed, would pluck a leaf from the chaplet that adorns the illustrious dead, for the purpose of adding to the reputation, already great, of the author himself. I refer especially to the chapters on Cysts and on Adenoid Tumours. I think the deliberate judgment of any impartial person must be that Sir A. Cooper is not open to the criticisms advanced against him, but that he is fairly entitled to the honours that have usually been accorded to him, and by no one more unreservedly than by the author's friend and former pupil, M. Lebert.

If what M. Velpeau states as to the views entertained

respecting cancer and adenoid tumours, &c., be correct, the general condition of pathological knowledge on these subjects in France must be vastly below what it is throughout England and America. A similar remark applies to many of his observations on the diagnosis of cancerous diseases; but as I have added, wherever it seemed called for, a short note to these statements, it is needless to repeat them here.

The Council of the Society considered it inexpedient to reproduce the original drawings; but no alteration has been made in the text of M. Velpeau's work, excepting the omission of the details of some of the numerous illustrative cases, and also, for reasons stated in the foot-note at pp. 590-1 of the summary of the tables of cancerous diseases.

As respects the general subject of the treatment of cancer in the breast, it must be confessed that M. Velpeau has not been more fortunate than others in advancing our therapeutical knowledge. There are, however, some indications that a brighter era is beginning to dawn upon us in this respect.

The aim of the majority of observers has been the discovery of a specific remedy capable of acting as a direct antidote to cancer; but reflection, perhaps, points to the conclusion that more is to be hoped for from well-directed efforts to discover the nature and cause of that error in nutrition which leads to the production of the cancer-cell and cancer-stroma, in place of the more enduring, though, as it were, less independently vitalized, normal tissues.

Cancer seems to be a substitution for the natural structures of the body, of a cell-growth endowed with amazing reproductive vitality, but very deficient in stability; early prone to degeneration into fat, the lowest of the animal constituents; and altogether incapable of resisting inflammatory changes.

What, it appears to me, we may hope from therapeutics is the discovery of some means of assisting this imperfect kind of nutrition and growth, so that it shall no longer stop at the production of a cancer-tissue, but become developed into the higher and normal structures of the healthy being. Thus, in the end, we may possibly

arrive at a species of knowledge, such as stands us in good stead in the treatment of what was once considered an incurable disease—Diabetes mellitus,—and learn to prolong our patient's existence, not by curing his cancer so much as by altering his assimilating and nutritive powers, and enabling him to avoid those conditions which lead to the development of the cancer germs.

To effect this, the question of operation must be placed in a somewhat different light to that in which it is generally regarded.

Those surgeons who extirpate cancerous tumours, even if they do not, unlike some pathologists, in theory acknowledge the local nature of cancer, yet practically act as though they did so; for, as a general rule, when once the wound has healed, the patient is subjected to no further treatment. On the other hand, those who decline to operate on a cancer leave behind a focus of the disease, which must almost inevitably render nugatory any kind of constitutional management.

Thus in neither case is the patient placed in a favorable position; and yet the fact still remains, that the cessation in the progress of some cases of cancer, and the length of time that may elapse before the return of a tumour after removal, are circumstances that appear to point out that the cancerous diathesis may become latent for months and years.

I have to express my deep sense of obligation to many friends for their assistance in the preparation of this translation, but especially to my colleague, Mr. de Morgan, who was kind enough to read over the proof sheets.

Harley Street,
April, 1856.

AUTHOR'S PREFACE.

A TREATISE on the diseases of the mamma is yet wanting in French practice; for the articles by Boyer, by Astley Cooper, and by writers on the subject in our dictionaries, can no longer hold their ground. The work which I now place before the public is intended in part to supply this deficiency. It was commenced more than thirty years ago. Some of the cases upon which it is based were collected in the Hospital of Tours, at the commencement of my medical studies, under the guidance of those distinguished men MM. V. O. Gouraud and Bretonneau. The experience of large hospitals, consultations grown to be numerous, and a practice of considerable extent, have enabled me to accumulate the particulars of more than two thousand original cases bearing on the whole subject. The result of these investigations, both anatomical and clinical, and the doctrines deduced from them have, however, been partially made known in different publications since the year 1822.[1]

The duties of the professorship intrusted to me at the Faculté de Médecine have daily compelled me to the reconsideration of these matters, as a number of theses and articles in the journals testify.[2] My earliest communications, indeed, excited some attention, both in the press and in the Academy, during

[1] 'Révue Médicale,' 1825, vol. ii, pp. 257, 326; ibid., 1825—1826; 'Arch. Gén. Méd.,' 1826—1827, &c.

[2] See, amongst others, Berigny, 'Gazette des Hôpitaux,' 1835, No. 165, &c.; Duchesne, 'Thèse de Paris,' 1839, No. 283; Colomb, ibid., 1841, No. 14; Traichet, ibid., 1843; Pareja, ibid., 1844, No. 207; Gaffarot, ibid., 1846, No. 71; Tizon, ibid., 1847, No. 42, Moisin, ibid., 1851, No. 230; Doré, ibid., 1851, No. 218; Robelin, ibid., 1852, No. 32, &c.

the years 1824 and 1825,[1] and my article on the breast in the 'Répertoire des Sciences Médicales,' which seems to have served as the starting points for the important memoirs of M. Nélaton on inflammation, and of M. A. Bérard on tumours of the mamma, shows what views I entertained on the subject in the year 1839; and thus it happens that numerous fragments of the present work have long been before the public.

The examination, the study, and the discussion of facts which continually present themselves at the bedside of the sick, have perpetually interfered to delay its completion; still, when once the impulse had been given, it was impossible not to persevere. Daily compelled to submit my opinions to the test of practice, I have had to modify and by degrees to correct them by the light which continually flashes from experience and reflection. My present work has thus been remodelled several times.

Its completion, however, has never been interfered with by deficiency of material, for no other observer has, I believe, had a similar mass to work upon. The consequence has been that without absolutely neglecting what has been accumulated by my predecessors, I have nevertheless been able, almost throughout, to content myself with my own observations. Even with this restriction my embarrassment has been great. As the cases alone in my possession would have filled more than a volume, I have limited myself to narrating only a few of them, and have simply tabulated the rest. To their illustration numerous drawings would also have been necessary, but this the price of the work would not permit, for it has been my object to place it within the reach of every one.

Of the three principal parts which compose it, the *first*, that which treats of inflammation, does not appear to require any preliminary apology. The classification that I have adopted, founded as it is upon surgical anatomy, and moreover susceptible of association with any other, may be improved or modified; but can scarcely be altogether rejected.

The other two sections, which relate to innocent and to malignant tumours, do not stand in the same position. The discussions on the subject which I entered into in various publications, and at the meetings of different scientific societies, during the years 1825 and 1844, show that my endeavours have always been

[1] Mémoire on a remarkable case of cancerous disease, 1825.

directed to the removal from the category of cancers of such tumours as, from their nature, might or ought to be kept distinct. So much confusion prevailed on the subject, and the difficulties were so great, that thirty years of assiduous labour have been insufficient to dissipate entirely the doubts and uncertainty that envelope it.

Meanwhile, one important result has been obtained; for henceforth we may admit as demonstrated that, out of 400 cases of tumours, confounded together under the common name of cancer, there were nearly a hundred which were not cancerous, and which we can now distinguish at the bedside of the patient. Further study, and the natural progress of science, will, I am persuaded, still more augment this proportion; but if the further I advance the larger becomes the number of innocent tumours in my tables, we are not therefore to conclude that they are more common now than formerly; no, it is solely that as our powers of diagnosis improve this number naturally enough increases year by year. There is, therefore, reason to hope that, starting from this point, surgeons will one day or other be enabled to contract the circle of genuine cancer to a still greater degree.

Innocent tumours are not all of the same species; and as in former times I often confounded them together, I formerly gave descriptions which, though applicable to some, cannot be applied to others. Hence it is that I have by turns made use of different names to distinguish them. In the first place it is essential to make at least two groups: one of tumours which are really hypertrophies, the other of tumours of new formation. The young Parisian School, resting upon data derived from the microscope, makes no distinction between these groups, but includes them all under the common title of partial hypertrophy of the breast. According to the microscopists, in fact, non-cancerous tumours are due to the accumulation of epithelium in the radicles of the milk-tubes and to the hypertrophy of a certain number of the mammary *acini*. This doctrine is satisfactory as regards the first group, but does not appear to me by any means so as regards the second.

Genuine hypertrophic tumours differ in so many characters from adenoid growths that it is difficult not to keep them separate. Even in the month of May of this very year, and again in November, two new examples of the most conclusive kind were brought under my notice. In both patients—the one a healthy young

woman, regular, the mother of two children; in the second an unmarried person, forty-four years old, hump-backed, and of broken constitution and health—the tumours, which were of the size of an egg, and softened towards the centre, were undistinguishable from the mammary tissue, with which, indeed, they were found to be everywhere continuous without appreciable line of demarcation. Placed side by side with adenoid tumours removed at the same period from other women, these growths were as different in their appearance as, for instance, is a fatty tumour from an hypertrophy of the tongue. The microscopical structure was, it is true, the same in both cases; but I have stated in the body of this work what amount of confidence should be accorded to this evidence.

I may here narrate a case of some importance. In a woman who was operated on for an enormous adenoid tumour, which was ten pounds in weight, eighteen months afterwards there arose at the border of the pectoralis major, a secondary globular and moveable growth, which I was able to remove by simple enucleation, and which, in other respects, both before and after the operation, presented all the appearances of other adenoid tumours. However, M. Follin, who made a very careful microscopical examination of it, sent me the following note:

"The tumour was composed of two different portions. The one, the cortical portion, dense, fibrous, and of a gray-white colour, slightly opaline, creaked under the knife, and on pressure gave exit to nothing but a serous transparent fluid, altogether distinct from the milky juice of cancerous tumours. The other, the central portion of the mass was throughout made up of yellowish deposits, grumous, and mixed in some parts with blood which had not lost its colour. Under the microscope the cortical portion was composed of the following elements: 1st, of a large number of elongated and clipsoid bodies, provided with a central nucleus, and terminating in rounded or thread-like ends; 2d, of fusiform bodies much elongated, slightly raised in the centre, and furnished with tails sometimes of great length. These fusiform bodies heaped together so as to form a somewhat dense mass constituted the fundamental part of the tissue.

"As for the central portion, it did not exhibit to me any definite structure. I observed in it nothing but an assemblage of fibres, and a few blood-globules, which were deposits of blood in process of decolorization."

Thus there were in this tumour neither epithelial cells, nor closed tubes, nor the elements of breast tissue, and yet how can we deny that it was of the same species as the one originally removed from the mamma? And, moreover, what was this tumour, which was as large as the two fists, and bore no resemblance whatever to the lymphatic glands, if it was not a tumour by deposition or by new formation?

The patient here referred to had scarcely recovered, when there came into the ward another female with an adenoid tumour of about forty pounds in weight, the like of which I have never seen. I maintained the innocent nature of this growth, notwithstanding, according to popular belief, it bore every resemblance to encephaloid; and although, according to the microscope, it was of hypertrophic composition, yet it was foreign to the proper mammary tissue.

Science and practice may therefore unite in inquiring whether, at all events, in the present state of our knowledge, adenoid tumours are not confounded with simple partial hypertrophies of the mamma, just as much as are fibrous tumours with hypertrophy of the uterus.

As for genuine cancers, I have found it very difficult to classify them. Microscopical researches, the assistance of which I sought so far back as the year 1830, and which I have promoted on all occasions, have not, in my opinion, as yet supplied us with data sufficiently definite to serve as the foundation of a good classification of tumours. I think I have, contrary to the assertions of the ultra-microscopists, incontestably shown—1st, that that cell, which is called the cancer-cell, is not the specific element of cancer; 2d, that well-marked cancers may not contain this cell at all; 3d, that it has been found in non-cancerous tumours.

In order to remove every pretext for doubt upon the subject, I have only made use of facts furnished by the microscopists themselves, and especially by M. Lebert. The 'Physiologie Pathologique' and the 'Traité du Cancer' of this author, works as conscientious as they are laborious, show that a multitude of tumours furnished by my practice have been examined and analysed by him. Consequently we have both witnessed the same facts. If, then, M. Lebert had limited himself to affirming the existence of certain forms of cells in the tumours of which he speaks; if, in one word, he had confined himself within the bounds of pathological anatomy, I should have no objection to

urge, and should not, to my deep regret, have found myself under the necessity of rejecting his interpretations, both theoretical and practical, on the subject of the cancer-cell.

Without speaking of M. Müller, and of some other eminent German anatomists, who deny the specific nature of the nucleated cell, I may observe that M. Alquié, of Montpelier; M. Michel, of Strasbourg; MM. Marjolin, Robert, Forget, and others, in Paris, have, on their side, arrived at conclusions similar to my own.[1]

Mons. Lebert, and, following him, M. Robin, are, it seems to me, mistaken in assuming as settled that which is still a matter of doubt, viz., what species of definite cell forms the fundamental element of each kind of tumour. In making the assertion, that each tumour made up of homologous cells ought to be classified amongst innocent growths, and that every tumour in which there exist heterologous cells, must necessarily be a cancer, they have drawn their conclusions too rapidly. To say that cancers of the lips, face, arms, uterus, or penis, and cancers of the integuments in general, are only hypertrophied follicles, or masses of epithelium; and that verrucæ, corns, warts, horny growths, steatomatous tumours, and the above-named cancers, are identical in kind,[2] must even, *à priori*, appear exceedingly strange to all experienced surgeons. Before the time of Sertuerner, analytical chemistry found in opium nothing but the elements of gum; but should we therefore have been justified in concluding that gum and opium are identical?

Consistently with his doctrine, M. Lebert has not hesitated to maintain that those ulcers, prominent eruptions, tumours and vegetations of the lips or face, &c., which are known to surgeons under the name of *noli me tangere*, *herpes exedens*, and cutaneous cancers, are not genuine cancers, but only pseudo-cancers, *cancroid* productions; and further, that when completely removed by operation, they are not liable to reproduction. In this way, too, he endeavours to explain the circumstance that cancers of the lips, for example, only reappear in their original situation, and are not usually followed by secondary formations.

Two mistakes attach to these propositions. In the first place, it is not true that cancers of the lips are not liable to return; perhaps they grow again with even as much obstinacy as cancers

[1] 'Union Médic.,' 1852—1853.

[2] See Mayor, 'Thesis,' 1846, No. 8.

of the breast; and, in the second place, it is certain that when once operated upon, they re-appear as readily at a distance as in their original seat, and it is also certain that they may become generalized. I was as well aware of this ten years ago as I am now; but then the microscopists object, that up to that period we confounded, in practice, epithelial tumours with true cancers, and that, therefore, observations, instituted anterior to modern researches, should not be brought into the question. Such a reason for not taking them into the account can have no weight with me; for it is evident enough to me that *cancroid* is precisely the disease for which surgeons have always operated under the name of *cancer*.

Nevertheless, the question raised by such a man as M. Lebert deserves examination. I therefore once more apply myself to it. All the cases of cancroid that I have met with have been submitted to microscopical examination, and I do not hesitate to assert, that in no instance have the microscopists seen me mistake a tumour of this kind for any other at the bedside of the patients. Now the result of my modern practice shows that the pseudo-cancers, like the real cancers, return with a deplorable tenacity.

Daring no longer to deny the fact, M. Lebert at first answered that this return may be due to a portion of the disease having escaped the knife. A new error; cancroid tumours do not re-appear exclusively in the neighbourhood of the primary tubercle; they show themselves under the jaw, under the ear, and in the lymphatic glands of the neck, as well as along the borders of the cicatrix. Driven back upon this point, the advocates of the Cell doctrine entrench themselves in another proposition as little stable as the preceding. If, say they, cancroid disease occasionally does recur at some distance from its primary seat, it is, at any rate, only in the lymphatic structures of the part, and never in the viscera; if, in short, the disease does become multiplied, it is in the same way as scrofulous tumours or tubercles, but not like genuine cancers. A worthless plea, which close observation overturns in the same fashion. I have seen cancroid disease of the lips re-appear, without the slightest continuity, in the substance of the bones, in the body and ramus of the jaw, sometimes of the corresponding, sometimes of the opposite side, and occasionally, when the disease has commenced in the inferior half of the face, even in the upper jaw; and I have also seen it reproduced in the liver

and elsewhere. I have witnessed more than this. In the case of a man, in whose labial cancer, removed two years before, there were only epithelial elements, the secondary disease, which appeared beneath the jaw, and in the region of the parotid, presented a considerable number of cancer-cells. In a patient of M. Maisonneuve, the tumour in one half of the jaw was filled with this cell; but the reproduction occurring in the other half of the bone, which was removed at the expiration of a few months, there were discovered nothing but fibro-plastic structures. The examination in both these cases was instituted by the ablest microscopists.

Thus, let us not deceive ourselves; cancroid disease is cancer. It eats away; it disorganizes the neighbouring parts one after another; it spreads by continuity and by dissemination; in the neighbourhood and at a distance, either by means of the lymphatic system, or in some other way, just like cancer; it never undergoes spontaneous cure, and always ends by occasioning death; it is influenced by no treatment that we know of, either local or general, and its destruction by cutting instruments or caustics is almost as often followed by reproduction as cancer properly so called.

Supposing, even, that it be reproduced only in the course of the lymphatics of the part, from the moment that we admit its fatality, what advantage can there be in making out that it is not a cancer? To say that death ensues from disorganization of the affected parts, and not by general infection, will, I should think, prove but a sorry consolation to the patient, seeing that, in the one case as in the other, he is fated to die of the disease.

The *fibro-plastic cell* stands in the same position as the epithelial. It has never seemed to me possible that a structure which forms the basis of the natural fibrous tissues of inflammatory induration, of indurated chancres, of hypertrophied glands, of fibrous tumours of the uterus, of conjunctival vegetations, and so on, can form the specific element of malignant tumours. The microscopists themselves, astonished that it should be so, have endeavoured to transfer all fibro-plastic growths into the category of innocent tumours, although many of them have hitherto been classed with cancers, amongst which, unfortunately, they must still remain.

Napiform and cartilaginous, as well as fibro-plastic tumours, do not reappear exclusively in their original seat, or because a part of the disease has been left behind at the operation. But like

cancroid, and cancerous growths, they are regenerated in all parts, in consequence of their inherent nature. After amputation of the leg, foot, or hand, I have seen them reproduced in the substance of the thigh or arm. When they return, it is rare for the reproduction to take place in the lymphatic glands; neither, however, is the reproduction due to continuity of tissue.

Amongst the cases of the generalisation of these tumours that have occurred in my practice, there are three which seem to me to settle the question.

Siméon Delaporte,[1] an adult, thirty-two years of age, was operated on three times, for a cartilaginous tumour of the thigh. The disease returned again, and the limb was amputated. Some months afterwards, the patient died, and at the post-mortem examination, a number of fibro-plastic tumours were found in both lungs, the exact nature of which was determined microscopically by MM. Verneuil and Follin, who sent me the following note, confirmatory of the observations of M. Giraudet. "The right pleura was thickened over a surface of several fingers' breadth, and in both lungs were found a large number of tubercles of variable size, composed of tissue analogous to that which existed in the stump.

"Careful microscopical examination detected nothing in these morbid products, but the usual elements of fibro-plastic tissue; in the pleura, the fusiform bodies were well developed, and in the medullary tissue of the femur some perfectly distinct fibro-plastic globules were recognised."

A stout young woman, of excellent constitution came into the hospital for a napiform tumour of the upper part of the left arm. This tumour, which rapidly attained the size of the body of an adult person, underwent softening, and caused the death of the patient at the end of a few months. At the post-mortem examination, the lungs were found stuffed with tumours of the same kind. The third case was that of a sarcocele in a young person; and after castration new tumours became developed in the abdomen.

Before the patient's death, the microscopists, relying on the existence of fibro-plastic fusiform bodies, and on the absence of the cancer-cell, maintained, in opposition to my opinion, that in these three instances the tumours were homologous, and conse-

[1] See Giraudet, 'Thèse,' No. 184, Paris, 1852.

quently innocent; and in the dead body, also, they ascertained the fibro-plastic nature of the internal tumours. The case of sarcocele occurred in the year 1847, and on that occasion, M. Lebert sent me three full notes, the first relating to the tumour of the scrotum, the second to the tumour in the abdomen during life, and the third to the results of the post-mortem examination, all of which show how, even then, their author struggled against a truth from which he can no longer escape.

1*st Note.—At the time of the operation.*—"A young man, eighteen years of age, under the care of M. Velpeau, had a fibrous tumour of the testicle, which being supposed to be cancerous, although it hardly presented the characters of that disease, necessitated castration.

"From no part of it could pressure extract any fluid resembling cancer-juice; and on forcibly scraping it with the scalpel, nothing else was obtained but a transparent matter like synovia.

"On examining the tissue of this tumour under the microscope, it was easy to convince myself that it was nothing but an ordinary fibro-plastic tumour, and that of the best kind. In parts, the fibrous tissue was completely organized, and enclosed in its interstices numerous plastic nuclei."

2*d Note.—Before the death of the patient.*—"I should be unwilling that you should understand what I said to you this morning respecting the patient with the abdominal tumour, consecutive to the operation for sarcocele, as a retractation of the opinion which I formed of the growth at that period. It was evidently different from ordinary cancerous sarcocele; it was destitute of cancerous juice and of tubercular-like masses of substance. The microscope nowhere discovered the cancer-cell, but only fibres, narrow, fusiform bodies, and fibro-plastic globules. I maintain, therefore, that the tumour *had not the characters* of cancer, but those of *fibrous, fibro-plastic, fibro-colloid growths,* &c. In spite of this, however, the examination of the present condition of the patient leads me to believe that he labours under cancerous cachexia, and that he has tumours of a malignant kind in his abdomen, although it is not impossible that these may be non-cancerous tumours, which, by their development, and by the compression they exert upon important organs, give rise to serious constitutional disturbance.

"I confess that this coincidence between a fibro-plastic tumour and cancerous tumours in the abdomen, is exceptional; but theory must, in all cases, yield to facts and observation, and we must always acknowledge what is unusual in a case, even when it does not coincide with the other results of our investigations. However, you who bring so much sagacity to the appreciation of facts, and to clinical research, will understand that we may frankly admit that a case is contrary to the results of previous investigation, without being in the slightest degree shaken, respecting doctrines that have been suggested by hundreds of careful observations.

"I am your debtor for so many marks of good will; you have afforded me so many opportunities of personally examining the structure of morbid products, that I shall be glad if it be in my power to exhibit to you the results of researches that you have so long favoured, and which will infallibly more and more play a part in the investigation of the intimate nature of disease, purged, however, by time, of errors inherent to new and very difficult researches."

3*d Note.—After the death of the patient.*—"I was present this morning at the examination of the body of the young man with abdominal tumours, consecutive to the operation for sarcocele. It is certain that the speedy progress of the disease, nine months in all from the commencement; the rapidity with which the tumours were developed in the abdomen after the operation; and, finally, the general cachectic condition of the patient, favour the diagnosis that you originally made. Nevertheless, the tumours removed at the autopsy, on microscopical examination, nowhere exhibited the characteristic cancer-cells, but merely those of fibro-plastic tissue, such as existed in the tumour of the testicle which you had previously removed from the same young man. On the one hand, therefore, we have the progress and many of the principal characters of cancer; and on the other, a marked difference in the elementary structure of the tumour, which was recognised also by M. Corvisart, independently.

"As, on the other hand, fibro-plastic elements are found in tissues evidently non-cancerous—such, for instance, as the little conjunctival vegetations which sometimes arise after the operation for strabismus, or in the lardaceous tissue of joints chemically inflamed, &c.—it seems to me that we should regard this case as

one of a general diathesis of fibro-plastic tumours, running a course analogous to cancer.

"Thus, however we may explain it, the fact still remains, that the characteristic element of scirrhus and encephaloid was nowhere found, notwithstanding the likeness which the tissue bore to encephaloid, and which the progress of the disease presented to cancer.

"I am, &c.,
"H. Lebert."

"16*th May*, 1847."

The point, then, is settled. The microscope discovers only homologous cells in tumours which run their course, and terminate in precisely the same way as cancers.

There remain scirrhus and encephaloid. Can we, at least in the case of these two forms of the disease, acknowledge the results furnished by the microscope? If its evidence be erroneous as respects cancroid, chondroid, or fibro-plastic tumours, it runs great risk of being untrustworthy throughout on the subject of cancer. Since different varieties of cancer may exist with homologous cells alone, the existence of heterologous cells is necessarily insufficient to characterise cancer: and, as we have seen, I have elsewhere proved that this latter cell may be wanting in genuine cancer, and be found in tumours that are not cancerous at all. Numerous cases, which cannot be questioned, moreover, enable me to affirm that tumours, cancers, endued with the specific cell of the most marked kind, the most complete in character, in short, with the typical cell, when once extirpated, may never return.

The preceding remarks ought not, however, to be considered as classing me amongst those persons who despise the microscope. On the contrary, I accept the facts that the instrument has brought to light, and only contest their application. Amongst other things, I do not deny that a marked and easily recognised distinction exists between what is called the cancer-cell, and the cells of other kinds of tumours. I admit, also, that this sort of cell, that is to say the cancer-cell, is, in truth, absent in the majority of innocent tumours; and, as clinical experience has, on its side, long ago proved that these tumours differ from cancer, I find that the microscope, in this point of view, merely confirms the results of simple observation.

However, I must add, that when reduced to these terms, the question cannot be unreservedly decided. Tumours in which microscopists have discovered neither cancer-cell nor cancerous nuclei, are not the less genuine cancers to the surgeon. I am persuaded that the cancerous element is specific, and that if it be not discovered in certain tumours of really cancerous nature, that is only because it is not yet sufficiently well known. Perhaps even there may be divers sorts of cancer-cells. After all, the question has been discussed for so short a period—these cells have hitherto been studied by so small a number of competent observers—the whole subject, in short, constitutes so new a world of investigation—that science is still but at its dawn, or starting point, respecting it; and I entreat the rising generation, whilst, on the one side, it gives credit to what the microscope has conclusively shown, not, on the other, to forget what ages of experience and bedside observation have also shown to be incontestable.

To sum up, what I question is, that up to the present time the so-called cancer-cell has been shown to be the *sine quâ non*, or initial element of cancer; and we may ask, whether the diagnostic value of this cell, which has already been shaken by the labours of Dr. H. Bennett, of M. Virchow, and of M. Courty, will not entirely disappear, if M. Mandl, who has met with cells in the tissue of the healthy lung identical with the cancer-cell, should succeed in proving, by means of a higher magnifying power, the exactitude of his assertions?

The question of relapse is also surrounded with numberless difficulties. Out of 250 persons operated on who survived, I had lost sight of 100 at the expiration of a year; of 150 at the end of two years; and of 200 at the expiration of five years. Of the remaining 50, I find 20 who remained well at the end of five, ten, fifteen, twenty, and even twenty-five years; but what, I may ask, has become of the rest. Return of the disease being in fact possible three, six, ten, or even twelve years after the operation, I do not see how we can establish any exact statistics of definitive cures, nor how we can absolutely refute the prognosis made by the advocates of the cancer-cell. Thus, as regards Madame Lamb, Mdlle. Gu—, Mdlle. Car, Madame Y—, whom I operated on in 1850 and 1851, and saw again in November, 1853, and who still remain well, what, I may ask, will be their condition even next year? The same inquiry might be made respecting the patients spoken of at pages 406, 464; 483-485, in whom

the operation dates back only two, three, or four years. However, it appears to me that we need not entertain any further apprehension respecting the patients whose cases are related at pages 462, 480, 491, 493, 494, since their cures date back, up to the present time, so far as twenty-seven, twenty, fifteen, and ten years. Madame M—, whom I operated on in 1832 with M. Mondat, but whom I have never seen since, although to my knowledge she remained well in November, 1853, stands in the same position.

I admit, therefore, that on this subject it is difficult to prove to the microscopists that they are mistaken. It is always open to them to say, that the disease will yet recur at a later period in those patients whom I have considered cured, although it has not done so hitherto; or they may maintain that, as the microscope was not consulted, the cancerous nature of the disease is questionable in the cases of long standing. I have, however, too much confidence in their sincerity to anticipate such an argument. Recognising that their conclusions have been drawn too hastily, they will again resume their labours, without losing sight of the data which the microscope has already furnished; and in this way, I firmly believe they will attain to some other discovery, and arrive at a more decisive test for the determination of cancers. Assuredly no one is more desirous of such a result than myself; and I shall always feel indebted to MM. Lebert, Robin, and Follin, for the care with which they have examined the tumours that I have intrusted to them.

The importance of the subject will, I trust, be considered to justify the preceding pages, and those that I have devoted to the subjects of cancer and adenoid tumours.

Being concerned only with tumours of the mamma, I might have set all these questions on one side; but such a course would not have placed this work on a level with science, and I should have incurred the risk of not being understood. Nevertheless, it by no means entered into my plan, in investigating tumours of the breast, to treat of the different pathological and microscopical problems that concern cancer in general. Science is in this respect at a period of renovation, which it seems to me, for the moment, neither admits of our advancing or receding, without passing beyond the boundaries of what is reasonable, useful, and true.

The majority of the cases made use of in this work have been

collected under my eyes and by my directions, rather than by myself. Four or six young gentlemen have been intrusted with this work year by year; consequently, more than a hundred medical men have taken part in it. Amongst the most distinguished, I am bound to name MM. Richet, Jarjavay, Deville, Gubler, Delpech, Follin, and Morel-Lavallée, who are already distinguished as teachers, or as physicians and surgeons of hospitals; as well as MM. L. Corvisart, L'Allier, Blain, Tenain, Demeaux, Blot, Poumet, Gimelle, Boulard, Houel, Béraud, and Foucher, who have distinguished themselves in various examinations. To enumerate all those who practise with distinction, either in the provinces or abroad, and those who even in Paris are content with the position of private practitioners, would occupy too much time. Still I ought to mention two younger pupils, MM. Barbereau and Roby, who have devoted themselves with great intelligence to the compilation of my statistical tables, and M. Camus also, who executed the drawings of a considerable portion of the tumours that are figured in the plates.

I admit also, that in many parts this work is but a sketch; and that in a scientific and doctrinal point of view, as well as in its practical bearings, it must anticipate much from the future. Engagements of every kind, and the requirements of numerous duties have, moreover, prevented my consecrating to its composition all the time necessary for it.

The questions embraced in it are not such as can be cleared up in a day, or at pleasure. The requisite facts cannot be fabricated, but must be waited for until they present themselves.

Numbers of others are now engaged in discussing or elucidating debated or obscure points, and I unreservedly congratulate them on the fact. My sincere good wishes attend all labourers whose aim is to clear up what is mysterious in the subjects that I have treated of, and in the questions that I have raised or agitated.

Paris, 15*th December*, 1853.

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A TREATISE

ON

THE DISEASES OF THE BREAST.

Composed of granules (*acini*), secretory lobules, excretory ducts, filaments, areolæ, cavities, cellulo-fibrous septa, vessels, and nerves; surrounded with fat-tissue, as a sort of capsule, and endued with intermittent or transitory functions; the mammary gland is subject to all the diseases common to other organs, and other glands, whether conglobate or conglomerate, and likewise to affections peculiar to itself.

Its shape, and its glandular functions, are moreover so different in the two sexes, and in children, that some of its diseases have to be separately investigated, as they occur in women or in men, or previous to the age of puberty. In early life, and in man at all periods, the special tissues, the lactiferous tubes, and the glandular structure itself of the breast, remain in a rudimentary condition, and are subject but to a small number of serious diseases: its loculi, and the cavities in its capsule, which have been well described by Mons. Giraldès,[1] being still confounded together with the cellulo-fatty envelope, present no variations such as are met with in the form and distribution of inflammation and abscess in nursing women.

[1] 'Anatomie Chirurgicale de la Région Mammaire,' &c.

PART I.

DISEASES OF THE MAMMARY REGION IN WOMEN.

SECTION I.

DISEASES OF INNOCENT NATURE.

The diseases of the female breast are divided into two principal classes. 1st. Diseases of an innocent kind, inflammatory or non-inflammatory. 2d. Diseases of malignant or cancerous nature.

By diseases of an innocent kind, I mean those which, left to themselves, do not threaten the patient's life, and of which recovery is the natural termination. Of these, I make two groups, one for the different kinds of inflammation, the other for such diseases as in their access or in their course are strangers to the inflammatory process.

CHAPTER I.

INFLAMMATORY DISEASES.

Inflammatory affections of the breast include, either at first or later on in their progress, excoriations, chaps, eczema, the different kinds of erysipelas, milk-knots, and all the varieties of phlegmon. Of these different affections, some by preference attack the nipple, others the areola, and some the lactiferous tubes; whilst several of them affect almost exclusively, at their commencement, either the gland alone, or else the cellulo-fatty tissue. Nevertheless, we must not lose sight of the fact, that innocent diseases, which have commenced in this or in that tissue, quickly invade the other structures of the part, either one by one, or several together, or simultaneously.

I.—DISEASES AND DEFORMITIES OF THE NIPPLE AND AREOLA.

Almost all the inflammatory affections of the breast depend, directly or indirectly, upon gestation or lactation. There are, however, a few which occur independently of these functions, and appear to be more immediately connected with the peculiarities of the structure of the organ.

§ 1. ECZEMATOUS IRRITATION.—1. *Of the Nipple.*—In women who have long ceased suckling, I have frequently observed the nipple to present a scaly condition, between chronic eczema and psoriasis.

In two such cases, the crusts covering the nipple were pretty thick, cracked, and adherent, and gave exit to a bloody discharge when an attempt was made to detach them. In one of the patients they were of a greenish, and in the other, of a yellowish-grey colour.

In these, as in many other instances, the disease had lasted for several years, and was accompanied by itching; but without any marked inflammatory symptoms. Underneath the crusts there was neither fissure nor destruction of tissue, but simple excoriation. Everything indicated that the epidermis alone had undergone destruction, and that the free surfaces of the lobules and little glands of the organ were the seat of the disease. The nipple looked like a raspberry or strawberry, and rather suggested the idea of the granular neck of the uterus.

In some instances, the friction of the nipple against the chemise or the stays, appears to have been the exciting cause; but I have seen others which did not originate in this way, so that the affection occurs under the influence of various causes which it is not always possible to specify.

One of my patients was relieved of her eczema in the space of a fortnight, by the simple application of ointment with white precipitate. In another patient, forty-seven years of age, the eczema terminated by assuming a ficoid (*ficöide*) ulcerative character; and I thought that at last I should have been obliged to resort to excision of the nipple.

Distinct from chaps, excoriations, or degenerations of a bad character, this affection is usually of slight importance, though sometimes of considerable obstinacy, and is, up to a certain point, comparable with ciliary blepharitis. Moreover, for several years past, I have ascertained that, if white precipitate ointment is insufficient for the cure, it is at any rate rare that the disease does not yield to touching the ulcerated surfaces, previously laid bare or denuded of their crusts, with the nitrate of silver or the nitrate of mercury.

2. *The Areola.*—The areola is subject to eczematous affections still more commonly than the nipple. In a certain number of cases I have seen, not only the nipple and the areola, but also the whole neighbourhood of the breast covered with simple or impetiginous eczema.

In the wife of a distinguished dentist in Paris, *eczema rubrum* was accompanied by lancinating pains, and redness, with thickening and induration of the skin to so great a degree that the idea of its being a cancerous affection was entertained by some who had been consulted. Nevertheless the disease—which had never undergone ulceration, and which was limited to the superficial surface of the integument, had persisted for about a year, and had even reappeared on three different occasions before finally dying away—at last became amenable to very simple remedies.

I have seen eczema of the nipple occupy both the breasts, and give rise to abscess, independently of pregnancy or parturition. In the majority of instances, the areola is covered only by simple eczema; but in others, the disease extends to a distance of an inch or so around the nipple, like a reddish or greyish disc, crusted, scaly, fissured, and of a colour in which there predominates a yellowish or greenish hue, more or less well marked.[1]

We must not suppose that eczematous or impetiginous affections occur only in very young women, or in pregnant persons, or in those who are nursing.

I have seen them oftener in the non-pregnant and non-parturient condition than in persons who are nursing; and it does not seem to me that any period of life absolutely protects the breast from their attacks. A woman of thirty-five, who was for some days in my division, at La Charité, in 1834, afforded a well-

[1 An illustrative case of the disease has been omitted from the translation.—Ed.]

marked example of the fact, for she was neither suckling, nor pregnant, nor irregular, nor indisposed in any way.

Eczema of the areola often appears to be developed under the influence of syphilitic infection.

Case I.—In July, 1837, I took into the hospital, a young artificial-flower-maker, 20 years old, for eczema of the left breast. The nipple and the areola presented a well-marked reddish copper tint. The surface was damp, and there constantly oozed from it a reddish humour, which was presently succeeded by scales of a dirty greyish copper colour. The disease was of six or eight months' duration, and had not changed its appearance from its commencement to that period. The girl, who was a prostitute, had had well-marked syphilis; and five months before, had been under treatment at the hospital "Du Midi."

Topical remedies not succeeding, the proto-iodide of mercury was administered in pills, and in two months the disease yielded.

We also frequently see eczema of the breast at the same time as abscess, in those who are suckling, or have been recently confined,[1] and it may exist without there being the least appearance of it in any other part of the body; as, however, the disease may destroy the nipple or the areola by ulceration, it is prudent to attack it early, and not to neglect appropriate treatment.

Treatment.—Amongst topical applications, I give the preference to those which follow:

1. Lard, washed in Rose Water, ℥j;
   Bicarbonate of Soda or Sublimed Sulphur, 8¼grs. Mix.
2. Spermaceti, in water, ℥j;
   White Precipitate (Amm.-Chlor. of Mercury), or Calomel, ℥j;
   Camphor, 3 grs. Mix.

After detaching the crusts by means of fresh butter, or a linseed-meal poultice, we carefully smear the red surface with one of these ointments, or, what is also useful, with sulphur ointment, made with fresh butter and with powdered in preference to sublimed sulphur. Bruised water-cress, boiled for a few minutes in fresh butter, also forms an ointment which is not without value.

If the eczema resist these measures, we may cure it by drawing a stick of nitrate of silver over all the denuded surface three or four times in the space of fifteen or twenty days. However, far from interfering, these different applications frequently mutually

[1 An illustrative case has been here omitted from the translation.—Ed.]

assist each other, and in many cases it is advisable to employ them successively or alternately.

Topical remedies should also usually be seconded by baths, either mucilaginous, sulphurous, or alkaline. At the same time, we should administer the decoction of dock-leaves, or of the clotbur (*Arctium Lappa*), or of soapwort, or of dulcamara, or some alkaline cooling water.

§ 2. EXCORIATIONS.—We are not at present considering excoriations resulting from ordinary external injuries, or those which may exist everywhere, and require no more special mention with regard to this than to any other part of the body; but especially we are concerned with such as occur in the breasts of nursing women. Persons recently confined, who suckle for the first time, are frequently troubled with softening and extreme sensibility of the nipple. The surface of the part constantly soaked in milk, and chewed by the infant, becomes softened and excoriated. In this state we sometimes see the root insulated, thickened, and shrunk up, become the subject of ulceration, that may wholly or in part destroy, and cause it to fall off. In such a case, the nipple assumes the shape of a small button mushroom, of a bright yellowish colour, from the surface of which there flows a sero-purulent, acrid, reddish matter. The disease—which is recognised by the pain induced in suckling, by the sensitiveness and irritation which it causes to the patients, by the red, granular, moist, excoriated fungous condition of the organ, and by the bloody oozing which suckling occasions—is particularly common in young, lymphatic, nervous women who have a fine, delicate skin.

Too frequent suckling, neglect of cleanliness, malformation of the nipple, voracity or too great vigour in the child, always favour its development; and the disease, if left to itself, with these causes still in operation, may, as I have already said, cause complete separation or degeneration of the organ.

Excoriations of the nipple are curable in several ways. The first indication is never to offer the breast to the child, without having previously applied very dry soft linen to the surface of the nipple.

If the disease affect one side only, the nurse should suckle on that side as little as possible, and at long intervals. Artificial nipples are also extremely useful.

If such simple precautions are not successful, we must have recourse to topical applications. All the affected parts are to be bathed several times a day with Goulard water or lead lotion. If the tissues appear softened, the Samaritan balsam (a mixture of oil and red wine) will be found more beneficial than the solution of lead; and should the pain be acute, we may prescribe with advantage the Linimentum Olei c. Calce (a mixture of equal parts of oil and lime-water).[1] These liniments are to be applied to the red and irritated surface three or four times a day. We may further employ a lotion of salt and water, or of pure wine, or even of brandy. Sir A. Cooper recommends a solution of one drachm of borax in half an ounce of alcohol and three ounces of water.

When such measures, as well as cucumber ointment,[2] *l'onguent populéum*,[3] cold cream, or simple cerate fail, I have found nothing

[1] [Sometimes called the Carron Oil Liniment, from its being first employed in those iron works, as a remedy for burns.—Ed.]

[2] [The following is the formula for cucumber ointment, according to Professor Procter. It is much used in America in irritated states of the skin:—

Green Cucumbers, ℔vij;
Pure Lard, ℥xxiv;
Veal Suet, ℥xv.

Grate the washed cucumbers to a pulp; express and strain the juice; cut the suet into small pieces, heat it over a salt-water bath till the fat is melted out from the membrane; then add the lard, and when melted, strain through muslin into an earthen vessel capable of holding a gallon, and stir until thickening commences, when one third of the juice is to be added, and the whole beaten with a spatula till the odour has been almost wholly extracted. The portion which separates is to be decanted, and the remaining two thirds of the juice are to be consecutively incorporated and decanted in the same manner. The jar is then closely covered and placed in a water bath, until the fatty matter entirely separates from the juice. The green coagulum floating on the surface is now removed, and the jar put in a cool place that the ointment may solidify. The crude ointment is then separated from the watery liquid on which it floats, melted and strained, and placed in glass jars, which must be kept closely sealed. A layer of rose water upon its surface will favour its preservation. A portion may be triturated with a little rose water until white and creamy, and put into a separate jar for present use. ('Am. Journ. of Pharm.,' xxv, p. 409.)—Ed.]

[3] [The Unguent. Populeum is composed of—

Dried buds of the Black Poplar (Populus nigra), ℥xij;
Fresh Poppy leaves (Papaver somniferum), ℥viij;
Fresh Belladonna leaves (Atropa belladonna), ℥viij;
Fresh Hyoseyamus leaves (Hyosciamus niger), ℥viij;
Fresh leaves of the Black Nightshade (Solanum nigrum), ℥viij;
Fresh Lard, ℔iv.

Bruise the leaves in a marble mortar; mix with the lard, and expose to gentle heat

more useful than a weak solution of nitrate of silver or sulphate of zinc (one or two grains to the ounce of water). Calomel suspended in decoction of marsh mallow is also a good remedy to try; as is likewise the white precipitate ointment. However, most of these remedies are not devoid of inconvenience, if they remain on the nipple at the time of suckling; and lead lotion, the unguentum populeum, metallic solutions, mercurial ointments, &c., being liable to affect the child, ought not to be used except after the failure of lotions of spirit or lime, or simple ointment. Whenever, however, we have recourse to an artificial nipple, there is nothing to prevent the most efficient direct applications, at the earliest period, to the excoriated parts.

Thus, lotions with brandy or alum water, as precautionary measures—lotions of lead or Goulard water; inunctions with wine and oil, or with oil and lime water, the application of soothing pomades, rose or cucumber ointments, cold cream, and white precipitate ointment, as curative means; the employment of a well-made artificial nipple, combined, of course, with strict attention to cleanliness, and extreme care of the mouth of the child—such are all the means by which we can treat the simple or granular excoriations of nurses' nipples.

§ 3. CHAPS OR FISSURES.—The numerous follicles, the wrinkles, the natural inequalities of the skin, the intimate union, and the close connection of the different elements which enter into the structure of the nipple, expose that organ to chaps or fissures.

Like excoriations, which are often the preludes to them, fissures of the breast usually originate in the moist congested state of the part, and in the action of the mouth of the infant on the nipple. It is thought that the acridity of the saliva, and the aphthæ of new-born children, act also as exciting causes. M. Rossi has even gone so far as to maintain (1845) that aphthæ in the child are almost the sole cause of fissures of the breast. In his opinion,

until the moisture is driven off, then add the poplar buds previously broken up, and mixed together for twenty-four hours, strain with much pressure, let it cool, separate the deposit, and melt again, in order to pour into jars. Poplar buds are said to impart a principle to ointments which considerably obviates their tendency to rancidity.—ED.]

which is founded, he states, on a large number of facts, the state of the mouth of the infant is thus transmitted to the breast of the nurse, purely by contagion.

This doctrine of M. Rossi cannot be implicitly received. It is true that thrush and aphthæ occasionally alter the saliva, and the secretions of the mouth, and render them acrid, and that then these fluids, by their contact with the nipple, give rise to irritation and excoriation, but it is difficult to see how fissures, and chaps often linear in direction and of considerable depth, can have a similar origin. I am, therefore, induced to ask whether this fact, a simple coincidence, has not been mistaken for the cause, and whether, on the contrary, the morbid state of the nipple never produces aphthæ, instead of being the consequence of them. It is at any rate certain, that many nurses affected with fissures, under my own observation, have suckled children whose mouths were perfectly sound. I may add, that whilst in some cases the infant has eventually become affected with aphthæ, it has more frequently remained free until after the cure of the mother. The seat of fissures in the breast is by no means constant, sometimes they appear on one part or other of the areola, and sometimes on the nipple, either at the base or more frequently on the surface. Some women have only one such fissure, but usually there are two, or even a greater number. Their length varies from half a line to three quarters of an inch. At first superficial, rugged, and irregular, in the course of a short time they become smooth, by excavating the tissues, and extending in depth through the tegumentary stratum. I have already said that in some instances they spread so as to ulcerate the root of the nipple, and cause it to fall off.

Irritated and enlarged by the child at each successive suction, the fissure soon gives rise to a bloody discharge, and the pain becomes acute. We can hardly conceive the agony which the disease occasions. Compelled to give the breast eight, ten, or fourteen times a day, the unfortunate mother is in such a constant state of irritation and pain, that she loses her sleep and appetite, and the secretion of the milk itself is soon interfered with. The disease may even extend into the substance of the breast through the lactiferous tubes, or into the neighbouring areolar tissue, either by continuity of the natural strata, or by the lymphatic vessels, to such an extent that more than one abscess of the breast has been caused in this way.

We have yet to notice, that fissures not caused by lactation, occasionally give rise, in like manner, to inflammation of the breasts.

Case 1.—Marie Roupel, 21 years old, a sempstress, four years married, who had already two children, and had suffered from a miscarriage, came into the hospital on the 10th September, 1836. The patient, whose constitution exhibited nothing remarkable, and who habitually enjoyed good health, was seized, three weeks ago, with a milky discharge, and a painful sensibility of the nipple. Paying no attention to this, and resorting to no remedy, she continued her work and usual habits for a fortnight. The disease had neither diminished nor increased in a marked degree, however the nipple was excoriated, and two or three chaps had formed at its root.

At the beginning of the third week, the pain extended to the side of the nipple, and shivering and fever supervened, with swelling and redness over a certain extent of the surface. At the time when this note was taken, there was upon the nipple a painful swelling, red and hot, with puffiness and extreme sensibility of the skin. The pain was dull and deep-seated. (Twenty-five leeches to the painful spot; poultices.)

The pain and fever were diminished the following day, and I hoped that resolution was still possible.

For this purpose I tried compression of the breast. On the 13th, the symptoms returned more acutely than on the night before, and it was now evident that suppuration could not be prevented. I therefore renewed the employment of topical emollient applications. On the 16th, the fluctuation left no doubt that the abscess ought to be evacuated. Well-formed white pus came away. The tumefaction quickly diminished, the cavity of the abscess filled up, and, on the 21st of the month, the patient left the hospital quite well.

This case shows that a woman who is neither in the family way, nor nursing, may have excoriations and fissures of the breast; and it also shows that this condition of the nipple may give rise to inflammation, just as in those who have recently been confined.

Treatment.—The precautionary measures to be adopted against fissures, consist in giving to the nipple a convenient shape before the woman is confined, by means of cupping-glasses, and pumps made for the purpose, and in increasing the density and deadening

the sensibility of the integuments, by means of astringent and tonic lotions.

The spirituous infusion of roses, and the decoction of bark, or walnut, are chiefly used for this purpose, and although these precautions often fail, they ought at any rate to be resorted to, especially in the first pregnancies of those whose skin is tender and delicate, and whose nipple is naturally moist, or little developed.

What has been said respecting chaps, applies in all respects to fissures. The disease is sometimes so distressing, that surgeons have occasionally employed very active measures; as, for instance, a solution of deuto-chloride of mercury. But, for my own part, I expressly condemn this remedy—there is nothing in its success which can make us prefer it, and it may prove the cause of serious mischief to the child, if the least particle remain on the surface, or in the interior of the fissures. An English surgeon has proposed to touch the fissures with the tincture of catechu, but I have not found this means of more or even so much value as gum water with calomel, or a weak solution of alum. What has succeeded best in my hands is light cauterization with nitrate of silver, as in the case of excoriations.

If the disease be more superficial than deep, we may have recourse to a solution of the same salt (one part to ten of water), applied with a brush or small sponge to all the cracked surfaces. Absorbent powders, lycopodium, starch, or common flour, are also sometimes so useful at the commencement, that we may make trial of them, as well as of lotions, and ointments either emollient or astringent, before resorting to cauterization. Collodion, too, seems to be of some efficacy. After carefully cleansing and drying the part, a thickish layer of collodion is to be spread over the areola, the fissures, and all the painful spots, so as to include the nipple, if it be affected, with the exception of its summit, which must always be left free for the escape of the milk. A sort of artificial epidermis is thus formed, which effectually protects the skin, and allows the fissures to heal underneath, without hindering the child from sucking.

Artificial nipples of some kind or other are indispensable: without them it is almost impossible for the most devoted nurse to continue to suckle. We may, therefore, employ the tips of a calf's nipple, either on the plan of Madame Breton or as modified by M. Pâques. The cork nipples of Darbot, or

softened ivory nipples, are available for infants who cannot use the cow's teats.

As for the recommendation of M. Rossi, who tells us to pay more attention to the child than to the mother, I am persuaded that it has no solid foundation; consequently I doubt whether it is enough to administer syrup and baths of chicory to the child, to wash its mouth with orange water, or vinegar and water, or honey water, every time it takes the breast, with the expectation of thereby curing the mother's fissures and excoriations. It does not follow, however, that we are to neglect the mouth of the child, but we rarely fail to get rid of aphthæ in a few days, by touching them with a pencil saturated with a mixture of hydrochloric acid and honey of roses (one part in ten), or with powdered alum. The proper treatment for the child is in other respects indicated by the symptoms which arise, and not by the presence of fissures in the breast. We ought to treat the infant for itself, if it be ill, but without anticipating that we shall thus cure the nurse. Should a woman affected with fissures cease from suckling? As a general rule, no; and even when only one breast is affected, it is well not to give up lactation on the diseased side. If the woman does not give suck, the continued secretion of milk keeps up heat, swelling, and tension in the breast, and such a degree of engorgement that the fissures and excoriations are aggravated, and soon threaten inflammation and abscess. If, therefore, there be no contra-indication, we ought to try every means of curing the fissures before renouncing suckling; but if the disease be obstinate, if the woman continue to be much affected, and the child get ill, or fall away, it is better to resort to a wet-nurse, since that is the only measure which can restore quietness and health to both mother and child.[1]

§ 4. INFLAMMATION PROPERLY SO CALLED.—The constituent elements of the nipple and its areola are united, and combined so intimately, and form by their union so homogeneous

[1 In practice, the following lotion is extremely efficacious both for excoriations and fissures of the nipple:

℞ Sodæ Sub-boracis, ℈j;
Aq. Rosæ,
Ol. Olivæ, āā ʒiij.

To be applied to the nipple before and after suckling.—ED.]

a structure, that inflammation and abscess cannot be treated of with the same separate minuteness as in other parts of the breast.

A. *Inflammation and Abscess of the Nipple.*—Although rare, inflammation of the nipple may exist separately. I have noticed two varieties, one which seemed to me to have its seat in the lactiferous tubes, the other in the proper glandular tissue. The first, which shows itself with tolerably mild symptoms, and moderate swelling, terminates by little purulent depots, and by the formation of a blueish or milky pus, which we sometimes see making its escape in little drops. The child continuing to suck, may thus swallow a quantity of pus instead of milk, which renders this kind of inflammation extremely dangerous to it.

More painful, accompanied by more rapid and more considerable swelling, inflammation of the proper tissue of the nipple terminates in suppuration, and gives rise to an abscess of a globular shape. This depot, which in some instances acquires the size of a large hazel nut, points sometimes in one spot and sometimes in another. The pus, which is thick and creamy, does not drop like rain from the natural orifices, as in the former case, neither is it liable to be imbibed by the child to the same extent. In both varieties, if resolution does not rapidly occur, the inflamed part gets so painful to the slightest touch, that suckling becomes absolutely insupportable. When once suppuration is established in abscess of the tubes, cure is impossible, except by the free issue of the pus through the sort of watering pot which is represented by the nipple. As for parenchymatous abscess, it discharges, and soon gets well, when it has once been opened, either spontaneously or by incision.

Treatment.—When early suspected, the disease should be attacked by resolvative topical remedies, especially by mercurial inunction. We ought at the same time to take care that the breast of the affected side be not used for several days. When suppuration is found to be inevitable, it may be promoted by means of emollient applications; and whilst on the one hand the surgeon ought not to interfere in abscess of the tubes, the reverse is the case in suppuration of the parenchymatous tissue. Here, in fact, the opening of the abscess ought to be practised as soon as the existence of suppuration is no longer doubtful.

B. *Inflammation of the Areola.*—The two varieties of inflammation and abscess just considered, also occur in the region of the areola, and in this respect there is a great similarity between the two parts. Whilst purely subcutaneous inflammation of the areola happens with difficulty, on account of the intimate fusion of the tissues, the same argument does not hold either in glandular or in submammary inflammation. In fact, under the brownish disc which surrounds the nipple, we often find inflammation, accompanied by little, irregular, nodulated swellings, a reddish or livid colour, dull, burning, or lancinating pain, and sometimes also by a marked projection or conical appearance of the whole breast.

Almost always caused by ulcerations, fissures, or other irritations of the skin, I have nevertheless seen this kind of inflammation, though rarely, in women who were neither pregnant nor suckling. In women recently confined, or in nurses, inflammation of the areola has this peculiarity, that it sometimes terminates quickly enough in resolution, if the exciting causes are done away with, or if it be properly treated from the commencement.

Case I.—*Inflammation of the areola; no child; a blow probably its remote cause; incision; poultices; cure in four days.*—A girl of 19 had for a month a chilly sensation in the breast, followed by pain and swelling. Leeches and poultices did not alleviate the symptoms, and she entered the hospital on the 24th of March, 1837. There was swelling of the left breast, and fluctuation at the upper part, a little to the inner side of the nipple. Incision gave exit to well-formed pus. The remarkable point was, that the patient had never had a child, and could only attribute the abscess to a blow received two months before in the street, but which gave her no pain afterwards.[1]

It should be noticed, as may be seen in the statistical table, that these abscesses get well sooner, and multiply less, than those in which the proper glandular structure of the breast has been the primary seat of the disease.

[1] Case II, is that of a woman in whose breast an abscess formed, consequent on numerous cracks surrounding the nipple, irritated by the sucking of the child, and by a blow, which gave rise to acute inflammation.

Case III.—*Inflammation of the left areola, from no other cause than a blow three years before.*— A girl, 21 years old, received a blow with the fist in the left breast three years before. Nothing followed, but three months before coming to the hospital she experienced slight pain and swelling in the organ. A little hypertrophy of the mammary gland could be perceived around the areola, and in a day or two a slight abscess formed.

If suppuration take place, inflammation of the areola terminates in a few days by little abscesses of irregular form, which rapidly burst. Often, however, these inflammations are the commencement of glandular abscesses when they are not combined with them. They are, in short, little swellings, in some respects comparable in external appearance with boils, which form in the substance of the areola in the shape of so many little cavities. As these little cavities have no communication with each other, perhaps they are only portions of the lactiferous tubes more or less distended by the pus; and if this be so, we must admit the existence in the areola of abscesses of the tubes and abscesses of the parenchyma.

Treatment.—Inflammation of the areola is to be prevented by getting rid, at an early period, of excoriations, fissures, and other irritations of the nipple and cutaneous surface of the breast. General bleeding, leeches around the nipple, saline purgatives, mercurial friction, linseed poultices, and so on, are measures fitting to adopt in such cases. Unfortunately, however, such treatment is calculated to interfere with the secretion of the milk, and to make lactation difficult; and as, moreover, it rarely succeeds in preventing the formation of abscess, the more rarely indeed because the surgeon is hardly ever consulted at the commencement of the disease; and, as it would be objectless in cases where suppuration has already occurred, it is better as a general rule to dispense with it, and simply have recourse to topical remedies.

When once abscesses of the areola have formed, the sooner they are opened the more rapid will be the cure; by waiting, however, there is the chance of several coalescing, from the destruction of the intermediate septa, and of our thus avoiding so large a number of separate incisions. On the other hand, the skin becomes thinner, more bagging, and is less likely to cicatrize rapidly. On the whole, then, all things being equal,

it is preferable to make an early incision; a simple prick suffices for each depot, and the cicatrization of all the little abscesses takes place in a few days. However, when left to themselves, they scarcely ever fail to open spontaneously at the end of from six to ten days, so that there is not more than a week's difference in the duration of those abscesses which are opened artificially, and those allowed to open spontaneously.

The difference, then, is neither so great nor so important, as to justify the surgeon in insisting upon the operation in timid persons.

The other affections of the nipple and areola, such as tumours, degeneration of texture, and so on, are treated of in another section, when considering the various diseases to which the rest of the breast is liable.

§ 5. DEFECTS IN THE CONFORMATION OF THE NIPPLE AND BREAST.—In some women the nipple is badly shaped, flattened, or not sufficiently prominent; in others it is wanting altogether; an imperforate condition of it has frequently been noticed; and instead of having one on each side, there are women who have several either on the right, or on the left, or on both sides at the same time.

Neither of the above conditions merits the title of disease, but as a well-formed nipple is necessary to the function of the breast, the surgeon is often consulted as to the remedies which such deformities admit of. If, during pregnancy, the female observes that her nipples are too short or too hard, and that there is no appearance of secretion about the sixth or seventh month of gestation, it is expedient to endeavour to soften them, and to excite their development by means of different topical applications. With this object, we must address ourselves to the class of emollient applications.

Milk, fresh butter ointment, almond oil, spermaceti, cucumber pomade, and even simple linseed poultices, constantly applied, at least during the night, whilst we bathe the nipple every morning with bran tea or soapsuds, are advisable measures. As the time of labour draws on, we may usefully combine with these means gentle manipulation and mechanical excitement, so as to induce the afflux of fluid to the organ whose development we desire to favour. In certain cases, the same end is to be attained by means of vigorous suction to the breast several times

a day, either by a stout infant, or by a healthy adult; and we may also usefully resort to a sucker, or kind of pump, which, when applied to the nipple, acts like a cupping glass.

Ingenuity has now given to women a choice of such convenient instruments for this purpose, that we need no longer employ the iron bottle, previously filled with hot water, and then emptied, which was brought into use by the Venetian lady of whom Amatus Lusitanus speaks, and which Boyer even mentions with some appearance of satisfaction.

If the lactiferous tubes are not free, little hard knots or strings may show themselves around the nipple towards the last days of pregnancy, and it is to this condition that the vulgar have given the name of "milk cords." The sharp pain which some women experience when these collections empty themselves from traction of the breast, either by the mouth of the child or by artificial suction, suggests to them the idea of *rupture* of these cords.

When the nipple has acquired its proper shape, it is desirable that the patient should employ a kind of thimble or small cap, either of india rubber, prepared leather, wood, ivory or cork; in short, of one of those little contrivances known under the name of nipple-shields, of which there are a great variety. Amongst the best are those of Madame Breton, constructed of the teats of the calf, and those invented by M. Darbo. These caps have a concave base which is applied to the areola, and a sort of glove to contain the nipple. The interior should be lightly coated with some greasy substance, and carefully cleansed every day.

I am not aware that *complete imperforation of the nipple* has ever been met with, but Boyer says, that the lactiferous tubes are often the seat of obstruction, interfering with the issue of the milk. I have never met with these obstructions, and have always observed that when once the secretion has begun, the nipple allows the milk to flow freely.

However, such obstruction can only occur from flattening or induration of the nipple, and is to be remedied by the means pointed out above, that is by the topical employment of emollients, and by vigorous artificial suction. Thus, as Boyer[1] remarks, occlusion of the nipple is often more apparent than real, and is to be referred to turgescence of the breast in the first few days after

[1] Boyer, vol. vii, p. 204.

labour. At that period the gland is swelled and hard, and the nipple so depressed that the passage of the milk through its proper channels is, for the time, impossible. The child should then be fed for a few days with the bottle, that the breast may relax and subside, when the milk will flow freely.

Complete congenital absence of the nipple is rare, and I do not know of a single authentic example of it, but the breast may be deficient in consequence of wounds or disease.

Burns, wounds, gangrene, and syphilitic ulceration, have more than once destroyed it, and the same statement applies to fissures and chaps. Destruction of the nipple may also be produced by different kinds of inflammation, by aphthous, eczematous, and every kind of serpigenous ulceration.

As a deformity, absence of the nipple is irremediable. The woman must therefore make up her mind to it, and give up the idea of using the breast of that side for lactation.

As for *multiple nipples*, it may be questioned whether the majority of examples that have been reported were not those of false rather than of true nipples. At least I have seen so-called supernumerary nipples in different parts of the body, as well as in the mammary region properly so called. Thus on the shoulder of a young woman I saw a fatty tumour, surmounted by a distinct projection, which had precisely the shape of a breast provided with its naturally formed nipple. Another woman had the same appearance in a fatty tumour situated at the inner and anterior part of the top of the left thigh; and in a third instance I met with a similar formation at the base of the buttock. If the fatty tumour which had the form of a breast provided with its nipple, had happened to be situated in front of the chest, it would certainly, at first sight, have been difficult to distinguish it from a true mamma.

I have also met, either in the breast or in the neighbourhood of the mammary gland, with little cutaneous projections—sometimes smooth, sometimes wrinkled, sometimes more or less narrowed at their bases, and at others shaped like simple, conical tubercles, which might have been taken for supernumerary nipples; but on examining them with a little attention it was always easy to ascertain that they were morbid growths entirely independent of the mammary tissue.

Nevertheless it does not follow that, in my opinion, a multiplicity of mammæ is impossible. Science possesses undoubted examples

of the deformity. In some instances the breast has even become the seat of a true milky secretion, as in the case of a woman under the observation of M. Leclerc, which M. Geoffroy Saint-Hilaire mentioned at the Academy of Sciences. M. Gorré has seen[1] as many as five mammæ in the same subject—to which cases may be added fourteen collected by Percy.[2] The occasional existence of this plurality of mammæ perhaps accounts for the multiplicity of breasts which the Egyptians gave to their goddesses Isis and Diana. If such deformities occasion uneasiness, extirpation affords the only remedy. The important point to attend to in the operation is, not to remove the real breast instead of the accidental one. But on this subject I cannot share the anxiety of Boyer, for it seems to me impossible, however slight an examination is made, to confound one of the projections I have been speaking of with the genuine mamma. The real nipple, in fact, is continuous with the mammary tissue, of which it is but the top, whilst the other is formed exclusively by a portion of the skin, or of some fatty tumour which it surmounts, and of which the diagnosis can never be difficult. When, then, the multiple nipple constitutes only a deformity there is no necessity for paying attention to it. If it be attached to a tumour, or morbid growth, it should be removed at the same time as the disease which forms its basis, and, under all circumstances, I do not think there can be the least difficulty in distinguishing a supernumerary from a true nipple.

On the other hand the breast itself may be completely wanting.

II.—INFLAMMATION OF THE BREAST PROPERLY SO CALLED.

Inflammation of the breast, which has been described under the names of *mastitis* and *mammitis*, is so common, and may have such serious consequences, that it should be carefully investigated. Without forgetting that in this situation, as elsewhere, inflammation is modified by age and constitution, by normal and abnormal conditions of the functions of the part, by the state of the general health, and by the nature of its exciting cause, we must not fail to observe, that, in an anatomical point of view, there are several varieties of it. These varieties have probably been established on the basis, which I endeavoured to explain about the year 1825,[3]

[1] 'Dict. des Sciences Médicales,' Art. Multimamie, p. 529. [2] Ibid.

[3] 'Anatomie Chirurgicale,' vol. i, p. 533, 1st ed., and p. 593, 2d ed.

which has since been adopted by M. Nelaton,[1] by M. Bérard (1842) and particularly by M. Vidal.[2]

Regarded in this point of view, three classes of cases must be established:—the first originates between the gland and the skin, in the subcutaneous cellulo-fatty tissue; the second is seated, either primarily or secondarily, beneath the breast, between the gland and the chest; and the third class has its principal focus in the interlobular network, or in the glandular structure itself.

Each of these classes comprehends at least two species, without referring to that chronic stage which applies to them all, or to the fact that each one of them not unfrequently gives rise to the other two.

Thus, subcutaneous inflammation may be either diffused or circumscribed, primary or secondary, simple or complicated.

Submammary inflammation may be either idiopathic or symptomatic, partial or general.

Parenchymatous inflammation, the usual starting point of the other two, in women who are suckling, may be restricted to simple lactiferous engorgement, to inflammation of the milk-tubes, or to inflammation of the lobules of the gland, which it may also embrace as well as the excretory ducts, and the glandular tissue.

A table of these varieties presents from six to ten or twelve divisions, as follows:

Erysipelas, Erythema, Milk-knots, Inflammation of the Lymphatics.

Phlegmon.

1. Inflammation, superficial or subcutaneous
   - circumscribed.
   - diffuse.
   - primary.
   - secondary.
   - complex.
2. Inflammation, deep seated or submammary
   - idiopathic.
   - symptomatic.
   - general or diffuse.
   - partial or circumscribed.
   - primary or secondary.

Lactiferous engorgement.

3. Inflammation, glandular or parenchymatous
   - of the milk-tubes.
   - of the glandular tissue.
   - complex.

In this division I do not include inflammation of the skin, Erythema nodosum, or certain varieties of syphilitic inflammation,

[1] 'Thèse de Concours,' 1839.

[2] 'Pathologie Chirurgicale,' 3d ed., vol. v.

considering that these affections have nothing special in them as regards the breast, or regularity as regards the tissue in which they commence.

Speaking generally, inflammation of the breast is seated sometimes in the pre-mammary tissue, sometimes in the glandular tissue or lactiferous tubes, either in the first, or in the second stage, in its commencement or at its termination. The first division, however, seems to me the more practical one.

§ 1. ERYSIPELAS, ERYTHEMA.—In the breast, erysipelas properly so called, whether vesicular, bullous, or phlyctenoid, easily becomes complicated with diffuse phlegmon: and even erythema nodosum, which in other situations scarcely ever undergoes suppuration, here sometimes forms an abscess.

In a woman attacked with inflammation, which in other respects had all the characters of erythema nodosum, I observed one of the four subcutaneous prominences that constituted the disease, and indeed precisely that one which at first had the least appearance of fluctuation, transformed into a genuine purulent depot. If the existence of similar swellings in other situations, and the general condition, progress, and duration of the disease had not united to clear up the diagnosis, I should probably have considered that the case was one of *lymphatic* inflammation, rather than of erythema nodosum. But the presence of patches of a brownish red, appearing and disappearing from day to day on different parts of the body, and the other well-known characters of this singular form of eruption, left no room for doubt.

§ 2. LYMPHATIC INFLAMMATION.—I am not aware whether, up to the present time, inflammation of the lymphatic vessels of the mammary region has been described as a distinct affection. If no mention has hitherto been made of it, it is doubtless because it has been confounded with certain varieties of erysipelas, or phlegmon, for it is not very rare.

The symptoms which usher it in are—

1st. Irregular chills, sometimes a downright shivering fit, a rapid and tumultuous pulse, which is unequal rather than strong, heat of the skin, restlessness, loss of sleep and appetite, and sometimes nausea.

2d. In the breast there are pain, great heat, swelling, and red

patches irregularly scattered about, coming to a focus in painful spots, more or less raised from the surface.

3d. Generally there is a painful state of the axillary glands, and sometimes reddish striæ lead from the breast to the armpits. Chaps, excoriations, eczematous eruptions, abrasions of the skin, and all affections of the nipple and areola, are the ordinary causes of lymphatic inflammation of the breast.

It is a kind of inflammation which differs from erysipelas in the circumstance that it is without any fixed or definite limit, and has not the festooned border belonging to the latter disease. Characterised by red patches, more or less thick, it also differs from phlegmonous erysipelas, in the redness, which is continuous, and in the fact that if suppuration takes place it scarcely ever occurs before the expiration of from a week to a fortnight.

When the first three or four days have elapsed, the symptoms of lymphatic inflammation generally lose much of their intensity, and from this period the affection persists only in the shape of sundry phlegmonous spots. In their progress these spots usually follow the course of circumscribed inflammation of cellular tissue, some of them terminating in resolution, others in suppuration.

In support of the preceding observations, I may adduce the investigations of M. Sappey, who has discovered several strata of lymphatic vessels in the breast, and according to whom the majority of abscesses in this situation are only the results of lymphatic inflammation. Without subscribing to this doctrine in all particulars, I am nevertheless inclined to believe that lymphatic inflammation of the breast has not been sufficiently attended to in practice.

Treatment.—When left to itself, this kind of inflammation sometimes ends by resolution, and rapid and complete cure. If suppuration result, the abscesses terminate by opening, contracting, and eventually cicatrizing. Sometimes, however, the disease is tedious and painful. Still it is one of a class of inflammatory affections most amenable to treatment, and easily subdued. If the surgeon be called in early enough, that is to say during the first two or three days, it is advisable to bleed from the arm to the extent of from seven to twelve oz., and the next day to apply fifteen or thirty leeches to the breast. All the inflamed parts ought at the same time to be covered by large emollient poultices. If the inflammation does not now abate, mercurial ointment should be freely applied to all the affected parts, and renewed three times a

day, without discontinuing the employment of poultices. If there is no reason to the contrary, the bleeding may be repeated, and a purgative administered, should the digestive organs not be disturbed. Compression is inadmissible. If, in place of diminishing, the painful spots increase in volume and extent at the termination of from four to five days, it is in consequence of some of them having already suppurated, and henceforth bleeding, mercurial ointment, or other topical remedies, are useless. We must, therefore, substitute for them linseed poultices as topical applications, baths, and diluent and acidulated drinks, as constitutional measures.

Suppuration in inflamed lymphatic spots, having little tendency to extend beyond its original limits, does not require us to give it very early issue. It is best to wait until the suppuration be completely established, and the fluctuation of the abscess manifest. The puncture into the depot or depots, moreover, rarely requires to be very large, particularly if the skin has not had time to get thin; and as in such cases the abscesses do not come to maturity on the same day, we must look forward to being obliged to open them successively, at intervals which cannot be precisely indicated beforehand.

As a general rule, when once opened, abscesses arising from lymphatic inflammation, heal quickly; but if considerable suppuration persist, we should continue to apply poultices. It is only when the wound in the integuments alone remains discharging that it becomes prudent to substitute simple dressing or *onguent de la mère* for the poultices.[1]

§ 3. SUBCUTANEOUS INFLAMMATION.—The skin of the breast is separated from the deeper structures by a layer of the cellulo-

[[1] The Onguent de la mère Thèele (Emplastrum Fuscum) is thus composed:

℞ Olive Oil, 2lb;
Hog's Lard, 1lb;
Butter, 1lb;
Mutton Suet, 1lb;
Yellow Wax, 1lb;
Litharge (Plumbi Oxydum semivitreum), 1lb.;
Black Pitch (Pix arida), 4 oz.

All the greasy materials to be heated together in a copper vessel until they begin to smoke; then the powdered litharge to be gradually added whilst the mass is stirred with a wooden spatula. The vessel is to be left on the fire until its contents assume a dark brown colour, then add the pitch, which has been previously purified by heat and straining through linen. When cool, pour into jars or roll in paper.—ED.]

fatty substance, which forms a portion of the general superficial fascia. This layer, which becomes blended with the subcutaneous fascia of the chest and the cavity of the axilla, is sometimes of considerable thickness. Continuous with the interlobular spaces, it is nowhere reflected between the breast and the surface of the chest, as might have been expected.[1] It merely rests on the deep cellular layer, and becomes lost with it in the general subcutaneous fascia.

This disposition gives to superficial inflammation certain characteristics of practical importance. The more distant from the nipple, and the thicker and more rarefied the cellulo-fatty layer becomes, the less distinct is it from the general subcutaneous fascia. Inflammations here follow the same course as in the limbs or abdomen.

However, it is true, that in fat persons especially this cellulo-fatty substance sometimes forms so thick and lobulated a mass that it becomes almost impossible to divide it into two layers, into an areolar or filamentous; and into a purely laminated layer.

The gland also, situated as it is between the two natural layers of the subcutaneous fascia, and enveloped in its capsule, prevents the existence of two strata of superficial fascia under the skin, although the laminated layer of this fascia is situated between the thorax and the breast.

As it approaches the areola, on the contrary, the subcutaneous stratum becomes gradually thinner, divested of its fatty vesicles, and eventually terminates by blending with the skin on one side, and with the glandular tissue on the other; whence it results, that in this situation inflammation does not follow the same course as outside the coloured disc of the breast. The following case, joined to those which were quoted before (Art. 1st), shows the slight importance of areolar inflammation; others demonstrate the course of inflammation of the subcutaneous layer of the remaining portion of the region.

Case I.—A servant, 23 years of age, came into La Charité on the 13th of September, 1844. She had recently been confined of a still-born child, and a week afterwards was seized with acute pain in the left mamma. She had observed redness and swelling towards the centre of the organ, and soon afterwards a projection which was more painful than the neighbouring parts. On admission into the hospital there was a swelling with three prominent portions below and on the inner side of the nipple. They

[1] 'Diction. de Méd.,' Art. Mamelle.

were of a shining red colour, and raised to the extent of one fifth of an inch from the surface, on a hard acutely inflamed base. The patient would not allow the abscesses to be opened, and in a few days one of them burst, after which they rapidly got well.

It is useful, therefore, to establish two varieties of subcutaneous inflammation of the mammary region.

1st. Inflammation of the areolar disc, which has just been spoken of, and to which I shall not return.

2d. Inflammation of the cellulo-fatty or subcutaneous stratum, properly so called.

The latter follows the same course as phlegmonous inflammation generally. Sometimes acute, and sometimes chronic, it occasionally occupies a large extent of surface, and up to a certain point resembles phlegmonous erysipelas or diffuse inflammation, but is more usually limited to some parts of the periphery or of the convex surface of the organ.

A. *Circumscribed Subcutaneous Inflammation.*—This commences by pain, heat, swelling, and more or less intense redness. The swelling has here this special character, that it shows itself at the commencement, without raising up the gland as in the deep-seated inflammations which will be considered presently. It looks as if some portions of the breast were puffed up by the side of the skin, and in some instances, as if the nipple was less prominent than usual.

Ordinarily the integuments become red at the same time as the pain and heat make their appearance. The symptoms in other respects are like those of subcutaneous inflammation generally. If the inflammation be of small extent, there is not much febrile or nervous reaction; but if the contrary be the case, we occasionally see a high degree of fever with the characters of acute vascular disturbance.

This species of inflammation sets in in three principal ways. 1st. From without inwards. 2d. From within outwards. 3d. Primarily in the subcutaneous stratum itself.

1st. *Subcutaneous inflammation proceeding from without.*—Inflammation by cutaneous irritation is often induced by erythema, erysipelas, eczema, or impetigo of the neighbouring parts, and especially of the areola. The friction of the stays and chemise, or a blister, a burn, or chaps may also cause it. In fact, it must

be acknowledged that integumental irritation may spread to the subcutaneous stratum, and there, from the tissues being less compact (*plus raréfiés*), inflammation may easily become established. It is unnecessary to say that blows, falls, and other external violence may likewise occasion it. It may occur at all periods of life in nursing or in pregnant women, or in those who are past child-bearing.[1] The following case illustrates this variety of mammary abscess.

Case II. *Subcutaneous inflammation of the left mamma, following external injury.*—A woman, æt. 38, entered the hospital on the 18th of October, 1836, for pain in the breast. She was of good constitution, and had enjoyed good health, until she sustained a fall, two years ago, from which there supervened hemiplegia of the left side during eighteen months, with hysterical fits, and subsequently, inflammation of the knee. A fortnight since, after a chill, the breast swelled, and became red and painful, below and on the outer side of the nipple. On examination, there was found to be marked swelling of the whole inferior half of the left breast, and on the inner side a red, prominent, painful projection; but the mammary gland itself was not raised up in any part, seeming, on the contrary, to be a little depressed. There was slight thickening and inflammatory œdema, extending as low as the inferior border of the gland. Incision gave exit to half a wine-glass of creamy pus; and in a few days the wound closed, and the patient returned home.

2d. *Subcutaneous inflammation from disease of the gland.*—The second variety of subcutaneous inflammation, and by far the most frequent one, is connected with previous disease of the secretory tissue, or of some of the neighbouring parts. Lactiferous engorgement, and irritations of all kinds, both acute and chronic, end by inducing inflammation of the subcutaneous stratum; and it is also possible that contusions or pressure on the surface of the chest may give rise to inflammation proceeding from the deeper-seated parts towards the surface. We seldom see persons who have been lately confined subject to this kind of inflammation, excepting after attempts at suckling, which could not be continued.

[[1] Three other cases in illustration of this variety of mammary abscess are quoted by M. Velpeau; the great feature in all of them being, that there was entire absence of any elevation of the gland itself, the fluctuation being in front of it.—Ed.]

Case vii.—*Subcutaneous inflammation of the left breast in a recently confined female who had attempted to suckle.*—A laundress, æt. 21, had attempted to suckle her child for the first fortnight after her confinement, but had been compelled to desist from inflammation and swelling of the breast. On entering the hospital, five weeks after the birth of the child, it was found that the left breast was much larger than the right, and that on its surface was a large red prominent patch. By separating the fingers, and fixing the base of the breast against the chest with one hand, and then compressing the organ with the first finger of the other hand, it was readily perceived that the mammary gland itself was not raised up, but that the inflammation was seated just beneath the skin. Some days after, the abscess had formed completely, and on incision, two spoonfuls of good creamy matter were evacuated. The patient made a good recovery.[1]

It is thus seen that inflammation may become developed in the substance of the subcutaneous stratum, either from external violence, from disease of the gland-tissue, from affection of the skin, or finally, from some internal predisposition, or, as we express it, spontaneously.

In whatever manner, however, the disease has originated, it usually follows the same course, and presents the self-same symptoms as were pointed out above. Still it must always be borne in mind that numerous anomalies may occur. Thus, in pregnant women, a blow may give rise to subcutaneous inflammation in the first instance, and subsequently to parenchymatous inflammation.[2]

Symptoms.—Subcutaneous inflammation is to be recognised by the characters mentioned above. It is distinguished from erysipelas by the circumstance that the swelling arises between the integuments and the gland, and is permanent; the redness uniform, rose-coloured, purple, or brown; and the pain and heat dull, and rather deep seated. There are none of those yellowish-red patches on the skin, ending in an abrupt manner or with a festooned border; nor that stinging, burning pain, characteristic of true erysipelas. It is further distinguished from lymphatic inflammation, by the absence of red lines running up the neck or to the side of the axilla; from phlebitis, by the absence of the hard,

[1 A similar case, No. vi, quoted by M. Velpeau, has been omitted from the translation. —Ed.]

[2 Case viii, illustrating this combination, has been omitted from the translation.—Ed.]

red, and painful cords, and of the irregular shivering and other symptoms of purulent infection; from diffuse inflammation, by its circumscribed limits, by the bosses accompanying it, and by the slight swelling of the neighbouring parts. The termination of subcutaneous inflammation is almost always either in suppuration or in resolution. The thickening, mortification, and degeneration of tissue, which may prove to be its consequences, will be considered hereafter. Its duration—which is variable, in proportion to its intensity, extent, exciting causes, and the predisposition of the patient—is usually shorter than that of parenchymatous inflammation: for it is often recovered from in six or eight days after the opening of the abscess. At any rate, it is rare for it not to be extinguished at the end of three weeks or a month. Left to itself, it commonly ends in suppuration; but whether it terminate by resolution or by suppuration, it scarcely ever is at an end in less than from six to fifteen days. Even when it seems to be resolved, this kind of inflammation sometimes leaves a kernel, or indurated patch, in the tissues, in which a mere trifle may again light up inflammation.

Case ix.—*Subcutaneous inflammation of the left breast, commencing in a hard kernel, the remains of former inflammation.*—A cook, æt. 25, was in the hospital of La Charité, suffering under a painful swelling of the upper and internal part of the left breast; but believing herself, from the absence of pain, cured, she had resumed her usual occupations.

Some weeks subsequently she had commenced to feel pain in the spot originally affected, and applied again at the hospital.

The breast was swelled up at the upper and internal part, in which situation, at some distance from the nipple, was a red and shining projection, which contained pus, and was the remains of the former knot. After the evacuation of the abscess, she rapidly recovered.[1]

Treatment.—Preventive measures deserve much attention; for when once established, the disease is difficult to stop, and it therefore becomes necessary carefully to guard against all predisposing causes. On this account, we should not neglect to treat

[1 A case, No. x, of glandular inflammation on the right side, is related in contrast to one of subcutaneous abscess on the left, occurring in the same patient. It is here omitted. —Ed.]

crusted, eczematous, erythematous, and erysipelatous eruptions, and every similar affection of the skin, with their appropriate remedies.

As lactation exerts still greater influence in the production of deep or parenchymatous inflammation than here, I shall, when speaking of the latter, mention the precautions to be taken, which bear reference also to subcutaneous inflammation.

Curative treatment is similar to that which is appropriate in subcutaneous inflammation generally. If the patient be young, full blooded, and robust, it is good practice to bleed once or twice from the arm. If there be no general reaction, and the inflammation continue acute, from fifteen to forty leeches should be applied to the affected part.

Contrary to what was stated in the case of inflammation of the areola, it is right in this disease to apply the leeches directly upon the inflamed part, as they are more useful in that situation than at the circumference of the breast. If suppuration still does not appear to be inevitable, it may be useful to return, two or three times in the course of a few days, to this form of bloodletting.

Simple linseed poultices, applied directly to the part in ordinary cases, or sprinkled with laudanum if the pain be very acute, or with Goulard water should there be little pain, may be associated with the local bleeding.

It is also essential that the breast be supported, so as to raise it slightly, by means of a common bandage, and that the woman repose as much as possible on the opposite side; a double precaution, of much importance, whenever the dependent position of the diseased organ and the locality of the inflammation co-operate to produce gravitation of the fluids towards the inflamed part.

Should the preceding measures be contra-indicated at first, or should they have proved ineffectual, there is still a chance of subduing the inflammation by means of mercurial inunction.

Well-applied pressure, also, sometimes succeeds wonderfully; but being difficult to maintain, it demands extreme care, and many patients cannot bear it, except when it can be exerted by means of collodion.

I have several times been successful in dispersing subcutaneous inflammation of the breast, by covering up the painful part with a large blister; but as this measure does not always succeed, and many females have a great objection to it, I recommend its adoption only in default of a better.

In the way of constitutional treatment, it is advisable to act on the intestinal canal with some energy. We should keep the bowels open by means of drinks and laxative enemata, and not content ourselves with slightly bitter, or diluent ptisans, as in the case of inflammation from external causes; but we must, on the contrary, have recourse to active purgatives, such as Pullna water, castor oil, jalap, scammony, or senna, if the case occur in a person who is nursing, or as a sequel to confinement.

Calomel and antimony, in different forms—remedies extolled by many practitioners now-a-days,—are of slight value, if I may trust to my own experience, in the kind of inflammation referred to. I shall, however, return to this subject again.

After the first antiphlogistic measures, if the inflammation tend towards resolution, we ought to persist either with the blood-letting and the purgatives, or with the topical applications, assisted by compression. In those cases, on the contrary, in which the swelling continues, showing that the case will terminate in suppuration, we ought to resort to the treatment for abscess, and put aside debilitating medicines. We ought, also, to be aware that after five or six days of subcutaneous inflammation of the breast, really of acute character, it is hardly possible for resolution to take place, and that it is altogether irrational to persist in resolutive treatment when the existence of pus beneath the skin seems no longer doubtful.

Subcutaneous inflammation of the breast is a disease of too slight a character in the estimation of most women, for them to consult the physician at an early date. The consequence is, that, when first called in, suppuration has already occurred in the majority of cases. This explains the rarity with which the affection terminates by resolution. It ought also to be remarked, that the breast is a moveable organ, in front of the thorax, placed between two strata of cellular tissue, and, so to speak, isolated from the centres of circulation and nervous power, and, consequently, removed, in great measure, from the immediate effects of general treatment. Energetic remedies are necessary in order to get rid or stop the progress of acute inflammation, even of the smallest extent; and I may add that the position and form of the organ does not allow us to apply topical remedies and bandages with the same facility or security as in many other parts of the body.

B. *Diffuse Subcutaneous Inflammation.*—Contrary to what theoretical considerations alone would lead us to expect, diffuse

inflammation, or phlegmonous erysipelas, is somewhat rare in the breast. Still, we do meet with it; and accompanied by characteristics which prevent its being confounded with other kinds of inflammation. The few cases, however, that I have observed, do not sufficiently explain to me how it is that surgical writers have remained silent respecting this form of mammary inflammation.

Case xi.—A powerful and healthy young woman, who was neither in the family way nor recently confined, had been threatened for some days with abscess of the breast, which she considered to be cured, when erysipelas attacked the inner side of the left nipple. At the end of three days, the erysipelas assumed the character of diffuse inflammation. There was then puffiness of the whole breast, and the swelling increased with a rapidity like that which occurs in similar cases in the scrotum, eyelids, or labia majora. Four days later, a large gangrenous patch formed over the external half of the gland, and the patient rapidly sank.

The post-mortem showed that serous pus was infiltrated between the lobules of the breast, and in the subcutaneous stratum. Large shreds of mortified cellular tissue were seen underneath the integuments, but nowhere was there any purulent collection. The deep cellular stratum and the true gland structure were unaffected.

I met with something analogous in a person who had recently been confined. In this case the inflammation seemed to leave the convex surface of the gland, and to spread amongst the subcutaneous tissue. Suppuration rapidly ensued; numerous holes formed in the skin; the cellulo-fatty tissues became gangrenous, as if soaked with milky pus, and loosened, so as to be extracted in shreds; the breast, in short, looked as if it lay dissected out at the bottom of the sores: but the patient eventually recovered.

Perhaps this form of the disease belongs to the category of cases described by MM. Trousseau and Contour, which, according to these practitioners, often gives rise to the formation of sloughed cores. Whatever it may be, diffuse and gangrenous inflammation of the breast differs in more than one respect from diffuse inflammation of other regions: it may surround the whole gland, cross it in every direction, invade the cellulo-fibrous structure, the sort of capsule which surrounds and isolates the organ, and thus destroy the vascular network, which is, in some sense, the vital element on which the breast depends for its nourishment. Com-

posed of filaments, of laminæ, and of cells which are continuous across the gland in the form of septa, the cellulo-fatty tissue represents rather a felt-like (cribriform) structure, than a mere sheet-like lamina. It is manifest, therefore, that from this arrangement diffuse inflammation will advance equally in depth, thickness, and extent, instead of simply spreading laterally amongst the cellular tissue, as in common diffuse phlegmon of the extremities. Giving all due weight to these considerations, it must also be admitted, that the peculiar nature of inflammation itself has something to do with the characters which distinguish the cases recorded above.

In whatever aspect we regard it, diffuse inflammation of the breast is a serious disease. If we fail in bringing about resolution, and it is almost too much to anticipate so fortunate a result, in a short time all the subcutaneous tissue becomes infiltrated with sero-purulent fluid. The bands enveloping the lobules of the gland soon take on the same action, and if the patient survive and struggle through the case, it ends in a regular dissection of the mammæ. In women recently confined, or in those who are nursing, the lactiferous secretion still further increases the gravity of the prognosis, since the milk, escaping from some of the ruptured tubes, becomes mixed with the pus at the same time that the latter secretion gives rise to inflammation of the secretory structure.

Diffuse inflammation is to be dreaded when, in a case of common erysipelas, or erythematous affection of the integuments, the breast is observed to puff up all at once like a soaked sponge, and the pulse to become frequent, small, and feeble.

The treatment of such cases is in general the same as for genuine diffuse inflammation, and should vary according to the period of the disease. At first—that is to say, during the first two days—if the nature of the case be suspected, and there be no particular contra-indication, we must bleed from the arm and apply a large number of leeches to the breast. Mercurial inunction in considerable quantity, blistering, or even compression, assist in completing the cure should resolution seem likely to occur. When depletory measures fail, or when the surgeon is consulted only at the end of the third day, and sero-purulent infiltration seems inevitable, we can no longer trust to the preceding treatment. There is then only one really efficacious measure left to us, and that is numerous incisions. However

terrible the idea seems at first sight, this remedy must, nevertheless, be employed, for it is the only one that can arrest the mortification of the tissues and the extension of the inflammation. It is necessary that the knife be plunged deep; we must not fear to incise the breast and the integuments which cover it, in six, eight, or ten different situations, extending each incision for from three fourths of an inch to an inch in length. Rapidly executed, the incisions give but little pain; and, after all, when the cure is once obtained, do not leave behind them such traces as might be expected. In short, we have only to reflect on the danger of the disease, and on the impossibility of treating it in any other way, to overcome all hesitation. If suppuration have begun, and the skin be destroyed in any part, we must treat the abscesses with antiseptic injections. The decoction of bark or of walnut leaves is useful, but nothing equals the vinous infusion of the Provins (cabbage) rose, which is extolled in the treatment of ordinary diffuse phlegmon by M. Morand of Tours. It is frequently necessary, also, at this stage of the disease, in order to guard against the thinning and destruction of the remaining portion of the skin, to search out the most dependent parts of the detached portions and to make counter openings. I need not say that emollient poultices and dressing with linen and lint are also useful at certain stages of the inflammation, either for cleansing or for producing cicatrization of the depôts.

§ 4. SUBMAMMARY OR DEEP-SEATED INFLAMMATION.—Instead of a felt-like or areolar form, the cellular tissue separating the mamma from the great pectoral muscle, sterno-costal cartilages, and ribs, has the appearance of foliated laminæ, which permits of its being compared to the deep subcutaneous fascia of the abdomen and limbs. The consequence is, that in women whose breasts are voluminous, moveable, and heavy; in those who have frequently suckled, and, above all, if they have done so at a certain period of life, a sort of synovial bursa is formed. This cellular bursa, which has been described by M. Nélaton, but is not constant, may become the seat of all kinds of effusions and inflammations, such as we meet with in the bursæ mucosæ of other parts of the body. As it is often absent, deep inflammation of the breast does not always present the same features. In the ordinary condition, the disease has a marked tendency to assume the form of diffuse inflammation, and, however slightly

acute it may be, it seldom fails, in a short time, to encroach on all the space supporting the base of the mamma; differing, in this respect, from subcutaneous inflammation, which usually shows itself in the form of bosses, or projections, more or less accurately circumscribed on the surface of the breast.

In young women, and especially in those whose breasts are firm or not much developed, deep inflammation can only invade a portion of the submammary region, on account of the lamellæ, or sort of divisions which separate its whole extent into a number of compartments. In them we meet with circumscribed inflammation showing itself sometimes in one situation sometimes in another, rather than with the diffuse variety.

A. *Deep-seated Diffuse Phlegmon.*—Submammary, like subcutaneous, inflammation arises in three different ways: most commonly it commences in irritation of the breast, which spreads from before backwards, from the gland towards the chest; but at other times it proceeds from some disease of the thorax. A violent attack of pleurisy had evidently occasioned it in the case of a female under my care.

I have seen it supervene on several occasions as a consequence of the accumulation of pus, blood, or serum, in the pleura. Sometimes, also, organic disease in the lung—as a vomica, or tubercular disease, for instance—gives rise to it; and a fractured rib may have a similar result. The same statement applies to caries, necrosis, and all changes in the parietes of the chest that are in direct relation with the mamma. It is also probable that submammary inflammation may commence as a primary affection, without previous disease of the neighbouring parts.

The commencement of the disease in the cellular tissue, which becomes eventually affected, is somewhat rare. With few exceptions, it occurs only as the consequence of a constitution seriously damaged, or from general causes, the essence of which may be either known or unknown, or that may have arisen spontaneously. Hence it follows that submammary inflammation usually indicates previous disease, either of the gland itself, or of the chest, or of the general constitution. It is nevertheless true that external violence—as blows of all sorts—may give rise to it, without leaving any evident traces in the thoracic parietes.

By far the most common source of the disease is found in inflammation of the parenchymatous tissue of the gland in

women who have been reeently confined or are nursing. The following are examples of this form of abseess.

Case 1.—*Deep inflammation of the left breast in a person recently confined who had commenced to suckle; incision; rapid cure.*—A servant, 25 years old, resident at Paris for four months, of rather feeble eonstitution, although never having had any disease, exeept slight leueorrhœa, had been eonfined about a month and had snekled for a fortnight. A week ago she began to suffer pain in the left breast towards its upper and external angle, on the border of the axilla, where there were some enlarged glands. At the present time the breast is three or four times as large as that of the right side; and on embraeing it with the hands, so as to earry it towards the median line, it is observed to feel very heavy; the skin pits on pressnre, but does not lose its external redness. On the upper external half this redness is intense, and the breast is tight, prominent, and manifestly elevated. Below and on the same side, the skin, deprived of its eolour and without infiltration, is sound; but below and on the inner side, there is another hard irregular swelling, not eontinuous with the principal mass. There is aeute sensibility of the diseased parts, with almost constant darting pain. Fluetuation is evident above and on the outside, espeeially towards the border of the great peetoral musele.

The absenee of any blow on the breast, and the reeent aeeouchment of the patient, render the existenee of an abseess, whieh had eommeneed by inflammation of the gland itself, extremely probable. The suppuration has subsequently extended to the submammary tissue—the pus being thus situated between the breast and the peetoralis major. The abseess would have been opened at the time of the first visit if the patient, who was admitted on the 16th of June, had not requested that it might be postponed. On the 18th, an ineision an ineh and a half long was made above and on the outer side, along the borders of the gland, with the effeet of giving issue to a large quantity of pus, yellow, thiek, and of good charaeter. A tent was plaeed in the ineision, and a poultiee applied.

Suppuration eontinued for several sueeeeding days, but on the 21st, having assumed a more liquid eharaeter, like serum, the borders of the ineision were brought together. The laneinating pains continuing in the swollen parts on the inner and lower side,

deep fluctuation was discovered by examination, the swelling having evidently resulted in a second abscess.

On the 25th, two incisions were made into it, with the effect of giving exit to a large quantity of very thick pus; pressure evacuated the rest.

26th. Suppuration not very abundant; the lips of the wound tended to come together, but a hardish swelling existed in the neighbourhood; there was some tingling; pulse quick and regular; the tongue natural, and sleep good. Poultices.

27th. No more suppuration, only some induration. Iodide of lead ointment.

Discharged on the 28th.[1]

Symptoms.—We recognise deep inflammation, and distinguish it from subcutaneous inflammation by many symptoms. It is usually attended by reaction, fever, and considerable swelling, which includes the whole of the neighbouring parts, and seems to raise up the gland in front of the chest. The whole mamma looks tight, shining, and globular, and is traversed by large veins. The skin is hot and slightly red; and pressure from before backwards gives the sensation as if the breast rested upon a sponge. The patient complains of dull, deep, heavy pain. This pain is only slightly increased by gentle pressure, whilst in subcutaneous inflammation the slightest touch is hardly supportable. Externally, at least in the majority of cases, there are neither nodules nor patches, whether spongy or livid, or simply reddish in appearance. The progress of deep inflammation of the breast is always rapid; in from two to four or five days it reaches its greatest intensity. Sometimes in forty-eight hours the mamma will have doubled its natural volume. The affection almost always ends in suppuration and the formation of a large abscess. Sometimes, also, it involves gangrene of the cellular tissue,—as in phlegmonous erysipelas; induration either in patches or nodules is rarely a consequence of it. Resolution takes place in a very small

[1 Six other cases illustrative of abscess, occurring between the mammary gland and the pectoralis major, are quoted by M. Velpeau. The great symptom in all of them was, that "la mamelle toute entière semble avoir été soulevée," the whole breast seemed to be raised or pushed up by something behind it. In three of the cases, a blow or contusion had caused the inflammation. In two others, it followed on confinement; and in the remaining one, the exciting cause was not apparent.

The details have been omitted from consideration of the space they would have occupied.—Ed.]

number of cases, and this depends on the circumstance that from three to five or six days are sufficient to produce suppuration in the deep cellular tissue. Sometimes, however, submammary inflammation is long in getting well, even when it does not arise from lactation but from external violence; but in such cases there must be some complication, or the inflammation must have reached the parenchyma of the gland, as may be seen in the following instance:

Case viii.—*Submammary inflammation of the right side; simple dressing; multiple parenchymatous and subcutaneous abscesses; incisions; a seton passed completely through the mamma; recovery in sixty-five days.*—A servant, æt. 29, struck her right breast on the corner of a plank, but though she experienced considerable uneasiness, no bruise was occasioned. On the third day she began to feel pain at the anterior part of the axilla and upper part of the breast. There was slight swelling, which had much increased by the sixth day. On coming to the hospital, there was noticed at the upper part of the breast, a regular immoveable, ill-circumscribed tumour, projecting like a hemisphere, the base of which *seemed* to adhere to the bones, and to be continuous with them. Its consistence was variable, at the most projecting point fluctuation was evident, and the abscess appeared to be pretty near the skin, whilst lower down there were swellings of different density. There was no induration, but some thickening of the neighbouring tissues. The tumour seemed to consist of a collection, the boundaries of which were lost in the substance of the mammary gland, and in the fat tissue of the anterior wall of the chest. There was no pain even on firm pressure, and no shootings or sensation of heat. The general health was excellent, and the lungs perfectly sound, as were also the sternum and the ribs.

May 5th. An incision gave exit to a great quantity of serous flocculent pus. A probe passed into a largish cavity, the deep wall of which seemed to be formed by the anterior surface of the ribs, and external intercostal muscles. The bones, however, were not bare. Up to the 10th, all went on well, but on that day the pus appeared to have some difficulty in coming to the surface.

On the 11th, the breast was red and painful, and there was nausea, bilious vomiting, and much thirst. Next day these unpleasant symptoms were ameliorated, and until the 17th the case

progressed satisfactorily. On that day, however, the whole breast was swelled and painful, and the skin, especially below, shining. A probe ascertained that the wound communicated by a straight passage with a depot deeply seated on a level with the sternal portion of the fifth rib. A free incision was made, and after a considerable quantity of pus and blood had flowed away, a seton was introduced into the wound.

The case progressed satisfactorily; and by careful dressing and pressure the pus was daily evacuated.

On the 7th of June, however, the introduction of a probe demonstrated the existence of a fistulous passage, running from the upper collection down to the most dependent part of the breast. On the next day an incision was made at that which seemed to be the lowest point, and some bloody pus escaped.

9th. Suppuration abundant, the dressings covered with fetid pus. Some fever, foul tongue, nausea, and vomiting.

15th. A painful fluctuating spot was discovered on the right side of the sternum, on a level with the cartilages of the fifth and sixth ribs.

17th. A trifling incision gave exit to a small quantity of pus that was not fetid. And from this time, with the exception of the appearance of another small abscess, which had to be evacuated, the case did very well.

The fistula traversed by the seton gradually diminished and closed, so that by the 28th of July the patient had quite recovered.

Treatment.—The treatment of deep-seated inflammation is usually much the same as that for superficial inflammation, but requires modification in some of its details. Thus, bleeding from the arm is useful, and ought to be freely practised at short intervals, so long as there is any chance of cutting the inflammation short. The effects of bloodletting are comparable, in such cases, to those which may be expected from it in the treatment of parenchymatous inflammation generally.

Leeches are less useful than in cases of subcutaneous inflammation, but should be applied around the tumour, not on the breast itself; and it is principally on the outside, between the axilla and the mamma, or below the breast, that they are of much efficacy. They have little power over this kind of inflammation, because the gland in some measure conceals the inflamed parts, and for this reason it is better to apply them to the cir-

cumference than to the centre of the tumour. A large number ought to be used when we have decided on their employment, but general bleeding should be preferred when there is no contra-indication.

Mercurial ointments, iodurctted or not, have also but feeble power, for the seat of the inflammation is too distant from the skin. The same statement applies to emollient, narcotic, or resolvative poultices. Pressure and large blisters have equally little effect. The consequence is that indirect or constitutional remedies are about the only ones which afford any chance of success. But at the same time the affection generally resists all the measures that we can oppose to it, so that to some extent the natural termination of submammary inflammation may be said to be in the formation of abscesses.

The following, however, is a case, which shows that resolution may be brought about in a certain number of instances, by means of blisters.

Case ix.—*Deep inflammation of the left breast, in a woman recently confined, who had commenced to suckle; good effects of compression; resolution without suppuration.*—Braeque, five weeks confined, had a large supply of milk, and had suckled during the whole period, except for the last three days. A fortnight since, having been attacked with shivering, the left breast became large, red, and painful; an incision was made into it, a week ago, which furnished no pus and very slightly relieved the inflamed part.

March 6th. Poultices to the breast, which remained large, red, and painful, presenting the form of half a globe, and without fluctuation.

7th. A seidlitz powder was given without effect, and the next day castor oil was administered.

9th. The purgative repeated, and on the 10th, a purgative enema was administered, and compression resorted to.

17th. The compression, notwithstanding its good results was discontinued, for the patient was seized with sickness, colic, and uneasiness in the chest. The swelling had diminished.

23d. Compression re-applied.

30th. The breast is as well as possible. There only remains a little core of swelling at the inferior and internal part of the gland. (Mercurial friction.)

April 9th. The patient went out well.

Calomel and tartar emetic, in large doses, which have been vaguely recommended in the treatment of inflammation of the breast, are evidently more useful in submammary, than in subcutaneous inflammation.

I have often employed these remedies, and though the results were not remarkable, they nevertheless have, to a certain extent, justified the praises which have been bestowed on them. Thus, five sixths of a grain, or even a grain and a half of calomel, administered two, three, four, or five times a day, at the same time that bleeding is resorted to, has, no doubt, sometimes cut short submammary inflammation. The same statement applies to tartar emetic, in doses of three to five, six, or eight grains in the twenty-four hours, for several days together. The value of common purgatives, especially when the tongue is slimy, when there is no appetite, and the digestive organs indicate a disturbed condition of the primæ viæ, is incontestable. After all, we must not lose sight of the fact, that these remedies have no chance of success except when they are resorted to in good time, during the first three or four days for instance. When once suppuration has commenced, they are useless or insufficient; and after four or five days of unquestionable acute inflammation, suppuration is almost certain to have occurred.

B. *Deep-seated Circumscribed Inflammation.*—What has been said in the preceding article must be understood as applying almost exclusively to diffuse submammary inflammation, to that which encroaches upon, and usually extends, to the whole surface of the chest covered by the mamma. But, as in the deep subcutaneous fascia of the extremities, acute inflammation does not always assume the character of diffuse phlegmon, so it may also happen that in the breast the inflammation may remain partial or circumscribed in character. As might be anticipated, this form of the disease is not rare. When the inflammation commences in the inferior half of the mamma, it often fails in reaching the superor half at all.

In women whose breasts are naturally firm, and in whom the sort of mucous bursa, previously spoken of, may chance not to exist, inflammation may be set up at one part or other of the submammary layer of cellular tissue without necessarily becoming diffuse.

In such cases the symptoms differ somewhat from those we have noted elsewhere. The breast may swell and become painful either above, below, on the right, or on the left side. Instead of swelling altogether, and remaining globular, it may project more particularly towards one point or other of its periphery or circumference. The inflammation generally proceeds more slowly, and gives rise to less febrile disturbance; and when suppuration has occurred, it is still easy to discover that the gland covers the true seat of the disease.

The treatment also differs from that of diffuse phlegmon. The same constitutional remedies need not be employed with so much energy, whereas local measures and topical applications deserve some confidence. Thus leeches, mercurial ointment, and blisters, which are hardly of any use in the first class of cases, are not to be despised here.

Whether circumscribed or diffuse, submammary inflammation does not always remain confined to the structures behind the breast. It is not uncommon to see it extend to the fibro-cellular meshes which unite the subcutaneous layer to the deep cellular tissue, and thus to traverse the whole breast.

From being deep-seated at first, it may become superficial. This constitutes one form of the disease to which I shall return in treating either of glandular inflammation or of parenchymatous abscesses.

In other instances, rare cases however, it is on the side of the chest that submammary inflammation extends, although the most natural way for it to spread would appear to be towards the axilla. The continuity of the subcutaneous and deep layers with the general subcutaneous fascia would at first sight favour the supposition that inflammation might easily extend beyond these boundaries, and invade the neighbouring parts. It never does so, however. Surgical anatomy, which never leads into error but when we interpret it wrongly, affords the key to this apparent contradiction.

That deep-seated inflammation usually remains confined to the structures below the breast depends on the fact that the union of the superficial with the deep layer is rendered more intimate by a sort of fold which passes from one to the other, so as to complete the formation of a cyst, and enclose the gland in a genuine sac, or sort of aponeurotic envelope.

§ 5. PARENCHYMATOUS OR GLANDULAR INFLAMMATION.—*Mammary Adenitis.*—The mamma, as one of the glands, is subject to different kinds of inflammation, which many authors have included under the general name of engorgement of the breast. These inflammatory engorgements may occur in the mammary gland, as in all other situations, from blows, mechanical irritation of various kinds, or from internal causes and organic changes, but are, nevertheless, almost always referable to lactation.

Inflammation from internal causes usually begins in the lactiferous tubes, but sometimes in the secretory texture alone, or in the fibro-cellular tissue of the organ. Engorgements dependent upon the lactiferous secretion always commence in the lobular masses or in the interior of the excretory canals. However, it is not uncommon to see inflammation commence in the network which surrounds and connects all the other elements of the breast together, and of which I have already given examples in preceding chapters.

From these remarks it follows that the gland presents three distinct varieties of inflammation: Inflammation of the septa and fibro-cellular filaments; of the secretory lobules; and of the lactiferous tubes.

Although these three varieties of mammary adenitis are often included together, or are developed one after another, and sometimes form only successive degrees of the same disease, it must nevertheless be acknowledged, that they also occasionally present themselves singly, so that it is well to study them at first as so many distinct diseases.

A. *Lactiferous Engorgement of the Milk-Tubes* (*poil*).[1]—The swelling of the breasts, which occurs in women recently confined, or in those who are nursing, as also in some cases in the last months of pregnancy, can only be the natural result of the formation and accumulation of milk. When this does not transgress certain limits, it belongs to the normal condition of things. But if it be accompanied by pain and heat, and the milk no longer escapes from the nipple at the same time that the breast increases in size, it becomes a disease. In such instances, I believe that the engorgement is due to the retention of

[1 "*Poil.*" There is no exact English equivalent for this term; but the following explanation is given of it in Wilson's dictionary, "Nom d'une maladie assez ordinaire aux nourrices, qui vient d'un lait grumelé qu'il faut faire sortir par expression ou par succion." Node, inspissation of the milk.—ED.]

the milk, partly thickened and inspissated in its proper tubes. The breast acquires an enormous size, and gives rise to acute pain and to general febrile reaction.

I distinguish this painful enlargement from inflammation properly so called, by the circumstances—1st, that at its commencement there is no inflammation in the neighbouring tissues; 2d, that if, by any means, we succeed in restoring its normal fluidity to the milk, all the symptoms cease immediately; 3d, because we often see it disappear from one day to another under the influence of heat or stimulant applications.

Case I.—*Tumour of the right breast, soft, without induration or redness of the skin, containing scattered masses, with orifices giving exit to milk mixed with pus; mercurial friction; cure in five days.*—Berteuil, 20 years old, a servant, confined seven months, had in the right breast a large soft swelling, without redness of the skin or induration. On taking the breast in the hand, there are felt in the middle of the mass scattered lumps, and in the centre of the tumour are seen two little orifices, which give exit to milk mixed with pus, thus confirming the fact that the disease is an engorgement due to the retention in the milk-tubes of the fluids excreted by the gland—in one word, to that disease known under the name of "*poil.*" Under the influence of mercurial frictions, all the symptoms disappeared, and five days after the patient went out cured.

Lactiferous engorgement, in recently confined persons, is characterised by swelling of the whole breast, or, at any rate, of some of the principal lobes of the gland, which itself appears turgid and saturated like a sponge, or pushed aside, as in submammary inflammation. Instead of preserving a certain amount of mobility, with a smooth, tightish skin, the breast seems glued to the thorax, indurated and covered with lumps; the integument often traversed by large veins, and of a slightly blue tint, is, however, sometimes paler than in the normal condition. It may also be more red, or of a more decided rose tint, than in the condition of health. Sometimes accompanied with fever, and with exhausting perspiration, this species of obstruction, which is occasionally partial in character, does not, in some cases, produce any reaction, but remains, so to speak, indolent. It was of this variety that Aristotle speaks, when he says: "The whole breast is a spongy body, as if

the woman had swallowed *un poil* (*hair*) in drinking, from which there results a disease which is called '*le poil*,' and which remains until this foreign body has been expelled and got rid of, or until the child has drawn it out in sucking."[1]

We see, however, that this name of *poil* was not an invention of Aristotle, and that the meaning attached to it by different nations, authorises us to consider it as synonymous with lactiferous engorgement.

This species of engorgement, which I have often met with in nursing, and sometimes also in pregnant women, must therefore be distinguished from inflammation properly so called.

Case II.—*Right breast; tumefaction without change of form or colour; anticipated secretion of milk; compresses, with decoction of elder flowers; cure in six days.*—Lasne, æt. 19, a laundress, pregnant six months, perceived one day that her milk began to flow spontaneously. Five days afterwards she experienced acute pain, which destroyed her rest; and at the same time the milk ceased to flow, and the mamma became larger and harder.

On examination there was found to be considerable tumefaction. The mammary lobules, without being altered in shape or colour, appeared larger and harder than in the normal condition. The organ was painful on pressure, especially around the nipple. The secretion of milk, which was naturally to be looked for from the patient's condition of pregnancy, authorised the conclusion that the case was one of subacute inflammation of the internal lining of the milk-tubes, and that the milk having ceased to be discharged, had produced the engorgement of the mamma.

On the 30th of January the milk began to escape again from the nipple, and the breast had nearly returned to its natural size. On the 3d of February the patient had quite recovered.

As a thousand causes may interfere with the fluidity of the milk, we can understand that the lactiferous tubes are often exposed to this affection. One of the orifices of the nipple inflames, contracts, and the exit of the milk is immediately impeded. Retained in its tubes, in cavities formed of the living tissues, the milk, a liquid so easily spoiled, reacts upon itself, and undergoes changes in its consistence and nature.

A chemical action also goes on in its various constituents, and

[1] Translation (Cannerés), vol. i, p. 417, in quarto, vii, xi, xv books.

it is soon rendered nothing less than a foreign body in the breast.

If, for any reason, the breast be not emptied at the necessary periods, if the child be not applied to it when nature seems to require that it should be so, it produces the same effect as if the lactiferous orifices of the nipple did not enjoy their normal permeability.

Retention of the milk is, in fact, attended with the same inconvenience, whether it result from narrowing of the excretory orifices, or from the absence of suction.

Nothing has appeared to me to give rise more frequently to lactiferous engorgement than chilling of the breasts; as women are themselves aware, a draught of air usually produces it, and it is seldom that the patients do not attribute it to some sudden change from heat to cold. After a chill the secretion becomes more abundant, and the retention of milk more prolonged in women who can only give the breast at long intervals.

It usually occurs in relative frequency as follows:

1st. At the time of weaning.

2d. In nurses who incautiously expose their breasts to the air whilst suckling the child.

3d. In those who, in consequence of their employment, can only give suck a few times in the course of the day.

4th. In those in whom the flow of milk takes place in violent bursts, or in whom the infant sucks too vigorously.

Case III.—*Left breast; child weaned at the fourth month; hard swelling, pain, heat and redness; friction with a liniment of ammonia and camphor; cure.*[1]

The abuse of stimulating beverages—spoken of by A. Cooper—all irregularities in diet, internal diseases, and certain irritations of the nipple and areola, are also equally predisposing causes, but such as give rise rather to inflammation than to simple engorgement of the breast.

When left to itself, lactiferous engorgement may terminate, and in fact does terminate, in many women, by the re-establishment of the current of the retained fluid, that is to say, by resolution. Often, however, there follows a more active state of irritation—a true inflammation.

[1 Details omitted.—Ed.]

When the distension only acts mechanically, there is simply engorgement; but when thus distended, the milk-tubes may lose their tolerance, and then the irritation reaches the gland, and soon assumes the character of parenchymatous inflammation.

Case iv.—*Lactiferous engorgement; inflammation of the milk-tubes; iodide of lead and mercurial ointment; cure in four weeks.*[1]

Case v.—*Engorgement of the right breast, and submammary abscess; incision; rapid cure in twelve days.*[1]

It is, moreover, not uncommon to observe the breast in the same woman affected with lactiferous engorgement on one side, and with positive inflammation on the other.

Case vi.—*Glandular inflammation of the left breast; lactiferous engorgement of the right breast; cure.*[1]

Treatment.—It is of great importance never to confound "*le poil*" with inflammation of the breast, since the treatment most beneficial to the one disease, might be injurious to the other.

Lactiferous engorgement is to be obviated by giving the breast oftener to the child, or by emptying it by artificial suction, either by means of the mouth of an adult or of a young animal, or by an exhausting syringe made for the purpose, or by better regulating the exertions of the nurse and child.

Soft fine cloths and padded cushions, applied very hot to the breast, assist other precautionary measures; and at the same time we should enforce, if possible, a more regular diet, and attack, by appropriate measures, internal diseases, if any such exist.

In case this treatment is insufficient, it may be useful to have recourse to topical or general applications.

Bleeding from the arm, leeches around the breast, and purgatives, are here certainly of great use; but as such measures generally affect the secretion of milk, we should never decide on employing them in nursing women without very evident necessity. It is, therefore, advisable to confine ourselves as much as possible to local remedies. It is in this kind of engorgement exclusively

[1 The details of these cases have been omitted from considerations of the space they would have occupied.—Ed.]

that a certain number of liniments and topical applications, held in estimation by the public, as they formerly were by medical men, may sometimes be applied.

M. Ranques, of Orleans ('Journal des Progrès,' vol. xiv), and M. Conty de la Pomeraye ('Archives générales de Médecine,' vol. xx, p. 591), attribute much efficacy to the following mixture:

Cherry Laurel Water, ℥ij;
Ext. of Belladonna, ʒij, grs. vj;
Ether, ℥j.

I have several times employed this remedy with advantage, but frequently also it has failed to arrest the progress of the engorgement. The ammoniacal camphorated liniment, lauded by A. Cooper, succeeds equally well in some cases. The following is the formula that I have most frequently employed with success:

Sweet Oil, ℥iij, ʒij;
Ext. of Belladonna, gr. xvss;
Ammonia, ʒj;
Camphor, gr. xxx;
Yelk of Egg, gr. xxx;
Ether, gr. xxx.

When a certain quantity of one of these preparations is gently applied four or five times a day to the breast, we usually succeed in obtaining a rapid liquefaction of the milk, and a manifest disengorgement of the parts. I have also made use, with advantage, of poultices with chervil (*scandix cerefolium*), boiled in milk with the yelk of eggs, honey, and wine, and sometimes even of simple linseed poultices.

When the engorgement and the pain are seated more particularly on the outside of the areola, it is less difficult than one would fancy to continue suckling, and to spare the infant the unpleasantness of these topical applications to the vicinity of the nipple.

The simple enumeration of the topical applications spoken of above, shows plainly enough that their employment is dangerous, and that they should be proscribed if, in place of there being retention of the milk or lactiferous engorgement, the case is one of positive inflammation, whether superficial, deep, or parenchymatous. On the other hand, we should not hesitate to employ general bleeding, or leeches, or to give purgatives, and cover the breast with emollient or anodyne poultices, if the lactiferous engorgement

be accompanied with smart reaction, be the consequence of the final weaning, and shows itself in a woman who ought not, or cannot, continue suckling.

Case VII.—*Lactiferous engorgement consequent on a chill, a fortnight after a second accouchment.*[1]

Case VIII.—*Lactiferous engorgement with swelling of non-inflammatory kind in both breasts, following weaning, a fortnight previously; employment of ammoniacal liniment.*

Case IX.—*Lactiferous engorgement of both breasts; poultices; compression; cure.*

Case X.—*Mammary engorgement of the left breast; mercurial friction; compression; resolution in a fortnight.*

Case XI.—*Lactiferous engorgement of both breasts; poultices; the patient left the hospital before she had completely recovered.*[2]

Case XII.—*Lactiferous engorgement without inflammation, consecutive to delivery three months before; no other known cause, and no suckling; antiphlogistics.*

Case XIII.—*Swelling of the left breast of a month's duration in a person recently confined; no inflammatory symptoms; failure of liniments with the extract of belladonna, cherry laurel water, and of ether; compression produced slight improvement, subsequent to which the mammæ diminished in size from the employment of calomel internally, and of belladonna liniment externally.*[3]

In short, cases of lactiferous engorgement are so numerous, and the course and symptoms of the disease are so simple, that it would be superfluous to accumulate a larger number of individual examples.

1. In twenty-five cases the disease was situated—

In both breasts	7 times.
In the right breast	9 „
In the left „	9 „

[1] The details have been omitted. The author remarks that, in this instance, the disease held a middle place between lactiferous engorgement and mammary inflammation, and occurred in a woman who had been recently confined; but had not attempted to suckle. The case was a mixed one, requiring antiphlogistic remedies; but yielded with the same facility as simple engorgement.

[2] M. Velpeau observes, that in this instance, the engorgement was purely lactiferous, and of slow progress, occurring in a woman whose health was deteriorated, and in organs much impaired by repeated lactation. This variety is frequently long in disappearing.

[3] The details of these cases have been omitted.

2. Twenty-four of the patients had been recently confined, or were suckling, and one only was pregnant.

3. The engorgement was attributed—

To weaning	7 times.
To a chill	7 „
To a blow	5 „
As resulting from natural labour	6 „

4. The patients were of the following ages :

19 years	2
20 „	3
From 20 to 30 years	12
30 to 40 „	5
40 to 50 „	2
Of 55 „	1

5. Complete recovery resulted at the expiration of—

From 4 to 15 days	10 times.
15 to 30 „	3 „
30 to 40 „	3 „
40 to 60 „	2 „
60 to 80 „	2 „

and five women left the hospital before being entirely cured.

6. Finally, in eighteen of the cases, the engorgement was purely lactiferous; but in the other seven, it was either inflammatory, or chronic, or unconnected with lactation.

Date.	Species.	Age.	Occupation.	Confinement.	Seat.
1835	Chronic.	25	Sempstress.	Two children; recently confined; had suckled.	Left breast.
1836	,,	27	,,	One child.	Right ,,
1840	Lactiferous.	20	Artificial-flower-maker.	Two children previously, and recently confined	Both breasts
1841	,,	33	Labouring woman.	Recently confined of one child; had suckled.	,, ,,
,,	Chronic.	26	Sempstress.	No child.	Right breast
1842	,,	46	Servant.	,,	,, ,,
,,	,,	45	Sempstress.	,,	,, ,,
1843	Inflammatory.	25	Servant.	Recently confined; had suckled.	Left ,,
,,	,,	24	,,	,, ,, ,,	Both breasts
1844	Lactiferous.	26	,,	,, ,, ,,	Left breast
1845	,,	20	,,	Confined 6 months ago; suckling.	Right ,,
,,	,,	20	,,	Recently confined; did not suckle.	Left ,,
1846	,,	27	Sempstress.	Recently confined; suckling.	Both breasts
,,	,,	35	Laundress.	Has one child.	Right breast
,,	,,	27	Sempstress.	Has four children; recently confined, and suckling.	Both breasts
1847	,,	23	Laundress.	Has three children; recently confined.	Left breast
,,	,,	32	Sempstress.	,, ,, ,,	,, ,,
1848	,,	31	Laundress.	,, ,, ,,	Right ,,
,,	,,	55	Sempstress.	,, ,, ,,	Left ,,
1850	,,	27	Wife of a gardener.	Recently confined; suckling.	Both breasts
,,	,,	19	Laundress.	Six months pregnant.	Right breast
,,	,,	29	Servant.	,, ,,	,, ,,
1851	,,	22	Laundress.	Recently confined; suckling.	Both breasts
1852	,,	35	,,	,, ,, ,,	,, ,,
,,	,,	19	Sempstress.	,, ,, ,,	,, ,,

Table of Cases of Engorgement

Date.	Age.	Occupation.	Confinement.	Causes.	Seat.
1836	27		One child.	Resulting from the confinement.	Right breast
1835	25	Sempstress.	Two children; recently confined.	Weaning.	Left ,,
1842	46	Servant.	,, ,,	Chill.	Right ,,
1840	20	Artificial - flower-maker.	,, ,,	,,	Both breasts
1843	24	,, ,,	,, ,,	,,	,,
1846	27	Sempstress.	Recently confined; suckling.	Weaning.	,,
1847	23	,,	Three children; recently confined.	Resulting from the confinement.	Left breast
1848	27	,,	Four children; recently confined; suckling.	Weaning.	Both breasts
1850	19	Laundress.	Pregnant 6 months.	,,	Right breast

Cause.	Treatment.	Termination.	Duration.	Observations.
Weaning.	Iodide of Lead; compression; mercurial friction.	Cure almost complete.	38 days.	Remains of a mammary abscess following the confinement.
,,	Compression.	Cured.	34 ,,	
Chill.	Leeches; compression; mercurial friction.	Cure almost complete.	9 ,,	
Weaning.	Ammoniacal liniments.	Cured.	5 ,,	
,,	Leeches; poultices.	,,	19 ,,	
Chill.	Compression; hydrochlor. of ammonia; friction with iodide of lead.	,,	42 ,,	
Blow.	Friction, with iodide of lead.	,,	2 ,,	
Weaning.	Incision.	,,	34 ,,	
,,	Suspensory bandage.	,,	12 ,,	
,,	Ammoniated camphor liniment.	,,	6 ,,	
,,	Mercurial friction.	,,	5 ,,	
Result of confinement.	Leeches; poultices; iodide of pot. internally; purgatives; soap plaster.	,,	6 weeks.	
Weaning.	Purgatives; compress; poultices.	Went out before recovery	7 days.	
Blow.	Purgatives; leeches; poultices.	Cured.	9 ,,	
Weaning.	Poultices; compress.	,,	4 ,,	
Result of confinement.	Mercurial friction; compress.	,,	14 ,,	
Blow.	Leeches; poultice.	Improved.	5 ,,	
,,	,, ,,	,,	7 ,,	
,,	Incision; poultices.	Cured.	2 months 20 days.	
Weaning.	,, ,,	,,	2 ,,	
,,	Compress; elder-flower water.	,,	6 ,,	
Blow.	Incision; poultices.	,,	65 ,,	
Result of confinement.	Iodide of lead; mercurial ointment.	,,	4 weeks.	
,,	,, ,,	,,	,,	
,,	,, ,,	,,	,,	

treated by Compression.

Treatment.	Complications.	Termination.	Duration.	Observations.
Compression.	None.	Cured.	34 days.	Remains of a chronic submammary abscess.
Iodide of lead ointment; compression; mercurial friction.	,,	,,	38 ,,	Chronic.
Compression; hydrochlorate of ammonia; iodide of lead.	,,	,,	42 ,,	
Leeches; compression; mercurial friction.	,,	Almost completely cured	9 ,,	
Bandage; compression; suspension.	,,	Cured.	12 ,,	
Purgatives; compression; poultices.	,,	Went out before being cured.	7 ,,	
Mercurial friction; compression.	,,	Cured.	14 ,,	
Poultices; compression.	,,	,,	3 ,,	
Compression; elder-flower water.	,,	,,	6 ,,	

Mammary Adenitis, or Inflammation of the Glandular Structure.—Inflammation of the mammary tissue, whether primary or propagated from the milk-tubes, presents nearly the same symptomatic characters. It commences sometimes in the tissues enveloping the lobules, sometimes in the excretory tubes, and sometimes in the gland-structure itself. We have elsewhere seen how subcutaneous inflammation, in some cases, invades the glandular tissue, and how submammary becomes transformed into parenchymatous inflammation. Since adenitis is scarcely ever met with, except in women who are suckling, or pregnant, or who have been recently confined, it may be considered as a consequence of lactiferous engorgement. Commencing in the milk-tubes, the inflammation advances, step by step, from the nipple to the secretory acini of the gland.

I have, however, more than once met with it, either resulting from external violence, or from some unknown cause, in persons who were neither pregnant nor suckling.

Case xiv.—Parenchymatous inflammation of the left breast, without other apparent cause than a blow with the fist, received a year previously.

Case xv.—Inflammation of the right breast, in a healthy woman, occurring without other apparent cause than a chill.[1]

In the following case the glandular inflammation of the breast had arisen from the impaction of a needle point, and terminated by tedious suppuration, which at one time threatened to become serious.

Case xvi.—*Adenitis of the right breast, from the presence of a needle which had run into it; removal of the foreign body; poultices; incision; complete cure, with the exception of slight induration of the mamma.*—Causier, æt. 55, a sempstress, on lying down at night, ran a needle into her right breast, which penetrated deeply about four fifths of an inch above, and to the outer side of the nipple. She immediately felt acute pain, but the next morning no trace of the foreign body could be found; a trifling quantity of blood, however, flowed out on pressure. The pain, in part shooting and in part pricking, continued for some days, and was especially acute when the body was flexed. Linseed poultices were applied, but no other measures adopted.

[1 The details of the cases have been omitted.—Ed.]

On the 6th of March, 1852, she came into the hospital of La Charité.

On examination there was found to be, above and on the outside of the nipple, at about two fingers' breadth from it, a bright redness of the skin, extending over a space of four fifths of an inch. In the midst of this redness was a little blackish point, but without discharge. Pressure on it was very painful, and demonstrated the existence of an induration the size and shape of a hazel-nut. The foreign body could not be distinctly felt, but the patient experienced an acute pricking sensation when the breast was examined, as if a needle was pushed into the part. There was little sleep at night, and no appetite. Pulse 85.

On the 8th, things remaining in the same condition, a transverse incision, three fifths of an inch long and four fifths of an inch deep, was made over the centre of the induration, by means of which a common needle, without its eye, was extracted.

For the next few days the case proceeded satisfactorily; but on the 24th, the spot of induration had become extremely sensitive, the skin covering it being hot, burning, and bright red. Incision gave exit only to pure blood. (Poultices.) Some discharge continued for several days, but by the 4th of May, the patient was able to leave the hospital quite recovered.

Women also attribute mammary adenitis to the effects of a chill, even when it occurs unconnected with the puerperal state.

Parenchymatous inflammation usually manifests itself by pain and swelling, either in one isolated spot, or scattered here and there in the substance of the breast; the redness at first is not very intense, and the organ does not all at once increase much in size. The gland has by no means the puffy appearance which deep inflammation invariably gives to it. The finger simply discovers a few painful lumps, which are more uniformly red than in subcutaneous inflammation. The pain accompanying it, dull, and sometimes lancinating, is in general neither plunging, as in superficial inflammation, nor heavy and widely extended, as in deep-seated inflammation.

Having its seat in the glandules, which are surrounded by the bands, plates, and fibro-cellular spaces, which unite together, or form communications with each other, and are also continuous with the cellulo-fatty tissue in front, and with the foliated cellular tissue behind, parenchymatous inflammation has this peculiarity,

that it is often presented to us in the shape of numerous nodules, which readily become combined, either with subcutaneous or with deep-seated inflammation, or with both kinds simultaneously. It is indeed difficult for a number of the acini to be the seat of acute inflammation for more than a few days, without the disease in some measure passing beyond them into the interspaces of the capsules, in the first instance, and then into the subcutaneous or submammary tissue; for, as those tissues are yielding and vascular, they are infinitely more favorable to its development than the lamellæ and filaments which envelope each glandule.

In the secretory tissue, therefore, inflammation is, so to speak, only a passing disease, a sort of starting point for superficial or deep-seated phlegmon. The *progress* of mammary adenitis is usually less rapid than that of the other two varieties of inflammation of the breast. Suppuration rarely ensues before the eighth or tenth day, and often leaves behind it an induration, or sort of engorgement, which is long before it completely disappears. As it may pass from one lobule, or from one division or band to others, it is frequently protracted for a month or two, or even for a still longer period, before it finally disappears. One of the spots, primarily inflamed, no sooner passes into an abscess than another inflammatory lump appears in the vicinity. I have counted as many as forty-six in the same female. It is therefore impossible, in the first instance, to predicate what will be the duration of the disease.

The *prognosis* is consequently more serious than in purely cellular inflammation, whether superficial or deep seated. Bearing in mind the distinctions which we have laid down, the practitioner will never allow himself to be deceived by appearances. When he sees subcutaneous inflammation, he will affirm the existence of a disease of short duration. Deep-seated inflammation also, when uncomplicated, will not lead him to form a serious prognosis. The apparent innocence of parenchymatous inflammation, however, will not deceive him, but will, on the contrary, induce him to assert that the affection is one of very variable duration, and that its length is necessarily regulated by the number of lobules which may be successively involved. In fact, it is common to see this kind of inflammation continue for two or three months.

Treatment.—Parenchymatous inflammation, unconnected with lactation or pregnancy, is to be subdued by the general and local treatment of common inflammation; and as resolution is difficult

to obtain, the disease ought to be attacked energetically from the commencement. We should unhesitatingly have recourse to depletion, if the patient be young and strong, and there be the least excitement of the circulation. The application of fifteen, twenty, or even thirty leeches directly upon the inflamed part, rather than around the breast, is almost always a proper measure. Emollient poultices, baths, diluent or laxative drinks, and purgatives assist the bloodletting. When resolution commences, mercurial inunction is to be resorted to in place of, or at the same time as poultices.

When unconnected with the puerperal state, mammary adenitis may terminate by resolution; and even when suppuration occurs, it progresses less rapidly, extends less widely, and in fact, the disease gets well in a much shorter time than in women who are nursing. In persons who have been lately confined, a preliminary question presents itself. Should they continue to suckle? But this question suggests another, that of the advantages or inconveniences of the lactiferous secretion in such cases.

During pregnancy, suction cannot be prescribed as a remedy, for lactation is not yet established, and the treatment of inflammation must therefore be conducted in nearly the same way as in women who are neither pregnant nor suckling.

In some respects, it is the same thing with recently confined persons who cannot, or who will not, suckle; in all such cases, it is better to diminish the secretion than to evacuate the milk. I am accustomed to prescribe general bleeding, repeated at short intervals, rather than to a large amount at one time, to recommend the application of leeches upon or around the breast, and the employment of saline purgatives, baths, and in the first instance, of emollient or narcotic topical applications and afterwards, of resolvative or slightly stimulating ones, whilst the patient observes low diet. Well-applied compression has also produced good results in my hands; and the same may be said of large blisters. It is in this variety of inflammation of the mammary region that, according to Weiss, whey, or a decoction of periwinkles, and other things esteemed by the common people, are admissible, perhaps even useful.

If, on the contrary, the disease occur in a person who is suckling, and one breast alone is affected, we shall find it expedient to advise suckling only with the opposite side, to draw the affected breast with a breast-pump, and to cover the inflamed part with large linseed poultices. As soon as the inflammation diminishes, that

is to say, at the expiration of three, four, or five days, we should again give the breast to the child, for a short time only, but at frequent intervals; and we should also take care to bathe it with tepid water, and not to discontinue emollient topical applications. There can be no doubt, that by the extraction of the milk we remove one of the causes of the evil, but it is evident also that the suction itself forms a cause of irritation which reacts, in many cases, upon the glandular inflammation. The character of the milk also must undergo modification, and become changed in an inflamed mammary gland; and from these changes it is impossible to say what danger may not accrue to the child. This, however, is an important question, which I shall have to discuss at a later period, when treating of suppuration and abscess of the breast.

In women who are nursing, then, so long as we can hope to arrest the inflammation without suspending the suckling, depletion, purgatives, and those ptisans which are called depurative, should be avoided, at least as a general rule. We must simply keep the bowels acting by means of lavements, by whey, the juice of prunes and laxative drinks, and by rendering the patient's diet somewhat less substantial.

Recapitulation.—From the preceding observations it will be gathered that inflammation may commence in any one or other of the constituent elements of the mammary region.

1. In the skin, as erysipelas or eczema.

2. In the subcutaneous layer, as phlegmon or lymphatic inflammation.

3. In the submammary tissue.

4. In the glandular structure itself, under different modifications.

5. In a still more general manner, commencing either in the glandular or in the cellular tissue.

These different varieties of inflammation often run their whole course in the tissue in which they originate; but they sometimes proceed from one anatomical element to another. Nevertheless, if it be true that inflammation occasionally passes from the subcutaneous, or deep cellular layer, to the gland, it is equally true that it much more frequently reaches the enveloping structures and the cellular network, in cases in which it has commenced at first either in the glandular structure or in the milk-tubes.

To bear out these distinctions, it is enough to direct attention to the special characters which inflammation presents, both in its causes, symptoms, progress, and prognosis, and in the remedies

appropriate to it. Thus, idiopathic subcutaneous inflammation arises in the breast under the influence of the same causes as in all other parts of the body. Deep-seated inflammation may proceed from external violence, or from affections of the chest or axilla, but usually originates in some affection of the breast itself. As for inflammation of the gland-structure, it is obvious that lactation, confinement, or pregnancy, constitute almost its exclusive sources.

Respecting the symptoms, they are those of inflammation, being characterised by redness, circumscribed or diffuse tumefaction, which is elevated above the surface of the integuments, and accompanied by a sort of œdema, or puffiness, the whole being essentially different from that form of inflammation beneath the breast which manifests itself from the commencement by a raising up of the whole mamma, and often remains till the end without giving rise to well-marked redness, or to manifest irregularities on the surface of the part. Neither can we confound this inflammation with that in the glandular structure which shows itself primarily in the form of bosses more or less deep and numerous, and is preceded or complicated with suppression or retention of the milk, and often involves several parts of the breast at the same time.

Subcutaneous inflammation, like ordinary phlegmon, lasts little more than a week before it terminates in abscess,—in abscess which usually remains single, and seldom, when formed, escapes the attention of the practitioner. Deep-seated inflammation, on the contrary, although perhaps developing itself more rapidly, presents this remarkable feature, that suppuration, if it takes place, cannot be recognised until considerably later. From the depth at which they are situated, it happens that deep-seated abscesses do not, like those arising from subcutaneous inflammation, progress directly to the surface; they have often to traverse the breast from behind forwards, and thus give rise, secondarily, to subcutaneous phlegmon.

Parenchymatous inflammation, contrary to the two preceding, is almost always constituted of several successive inflammations, so that in some instances it may last for one, two, or three months.

So marked a difference in the symptoms and progress of the cases naturally entails noticeable differences in their termination and prognosis. When energetically attacked from the commencement, both superficial and deep-seated inflammation may sometimes be put an end to, and terminate in resolution. In the gland

itself, inflammation, if it be at all acute, almost inevitably leads to the formation of one or more abscesses.

As for the *treatment*, it has every chance of succeeding if it be appropriately selected for each kind of inflammation. Leeches in large number to the affected part, mercurial friction, compression, topical remedies generally useful, succeed well in subcutaneous phlegmon. They are, on the contrary, inadequate in deep-seated and also in parenchymatous inflammation. Deep-seated inflammation which is not benefited by them, and is aggravated by compression, requires general bleeding with leeches around the breast, and large poultices with mercurial ointment. It is in glandular inflammation that purgatives, alterative drinks, and topical applications purely emollient in character, are useful; ammoniacal, camphorated, and opiate liniments are equally applicable to lactiferous engorgements.

When, in short, we find that, in spite of all our treatment, mammary adenitis often lasts, by becoming extended, a considerable number of weeks, whilst, under appropriate treatment, subcutaneous and submammary inflammation scarcely continue more than from a week to a fortnight, the importance of the distinctions laid down above ceases to be questionable.

III.—ABSCESS OF THE BREAST.

Acute abscess of the breast, the usual termination of the inflammations we have just been considering, may also originate in disease of some part or organ more or less distant. Like inflammations, these abscesses may be divided into three classes, according to their seat or point of origin. In practice, we meet with them situated between the breast and skin, between the chest and mamma, and in the substance of the gland itself; so that for nearly thirty years, I have been accustomed to classify them as follows:

1. Subcutaneous or superficial abscesses. A. Of the areola. B. Of the cellulo-fatty tissue—primary, secondary.

2. Deep-seated abscesses. A. Idiopathic. B. Symptomatic.

3. Glandular or parenchymatous abscesses.

It is in consequence of not having attended to this purely anatomical division, that practitioners are still so little informed on the subject of abscess of the breast in general. What follows will show, if I am not mistaken, that this classification affords, at

any rate, one means of throwing light upon a question hitherto involved in obscurity.

§ 1. SUBCUTANEOUS ABSCESS.—Like inflammation of the same kind, superficial abscess of the breast presents two varieties—abscess of the areola, and abscess of the cellulo-fatty tissue.

A. *Abscess of the Areola or Tubules.*—Subcutaneous inflammation of the circumference of the nipple and areolar disc of the breast, gives rise, when it terminates in suppuration, to numerous little depots, which are almost always globular, and rarely exceed the size of a hazel-nut or walnut, or of half an egg. Stopped in their progress behind by the glandular tissue, these depots advance towards the front, with the more facility that the skin covering them is naturally fine and yielding. Situated in areolar or filamentous, rather than in lamellar tissue, they with difficulty increase in size. The septiform structure of the part, and the multiplicity of tubes traversing it, permit the existence of a certain number of these abscesses as so many distinct depots pretty exactly circumscribed. They are distinguished from the painful bosses formerly spoken of by a livid or bluish tint, and a shining tense appearance, which at first sight conveys the idea of a fluctuation, which has been preceded for several days by acute inflammation. If the patient also experience throbbing, heat, and dull pain in the lumps, and there be fever, we may be sure that the areola has become the seat of abscess. By bearing these symptoms in mind, we prevent ourselves being deceived by the natural inequalities of the part, by certain dilatations of the milk-tubes, by a spongy aspect of the breast, and by the creases and inequalities which lengthened or too frequent suckling sometimes produces. I have seen practitioners, who were deceived in this way, imagine the presence of abscesses which did not exist, in consequence of not reflecting on the necessary pre-existence of inflammation and tension, with thinning and redness of the integuments. A good means of determining the question of fluctuation in such cases, is to compress the breast in the direction of its long axis, as if to narrow it, with the fingers and thumb of one hand, whilst at the same time the unnatural lump is compressed with the index finger of the other hand from before backwards. If there be pus in the tumour, we shall find, that though capable of being depressed, it is tight, like a little

bladder, whilst the neighbouring lumps convey the idea of a sponge or of some solid body. This compression, moreover, gives to a genuine abscess, on the part where it has been touched, a livid tint, a shining appearance and flexibility which clearly distinguishes it from any inflammatory or natural prominence. When left to themselves, abscesses of the areola, or, as we may also call them, mammillary abscesses (*abcés tubéreux*), from their tubercular or furuncular appearance, may form the foci of abscesses of the cellulo-fatty tissue or of the gland itself. They almost always terminate in ulceration, and burst externally; and without being very serious, they nevertheless are less mild and simple than subcutaneous abscesses properly so called. Established in a part where the cellular tissue forms only one isolated layer, in which all the elements are in some measure confounded together, so as to constitute a sort of *felting*, they do not always remain completely independent of glandular abscesses. If the nipple be well isolated from the abscess, and the milk-tubes appear unaffected, and the patient be nursing, it is better to continue the lactation than to recommend weaning. If, on the contrary, the nipple be too near the abscess, or any excretory tube be involved in the disease, it is more prudent not to give the breast on that side at all, but to withdraw the milk by artificial means, which, however, we should dispense with, if the instruments employed cause pain and sensibly augment the irritation. This preliminary question being determined, the treatment of superficial abscess of the areola becomes both simple and easy. If they are not opened, they soon burst of themselves; but the question arises whether it be better to put a cutting instrument into them, or to wait for their spontaneous discharge. If their progress be not interfered with by injudicious treatment, nature generally gets rid easily of mammillary abscesses of the breast; but to effect this, time is necessary, and then the integuments, becoming thinner and thinner, and more and more separated, do not permit of the depots discharging and cicatrizing so rapidly, or so well, as when the surgeon has interposed in proper time. I am therefore accustomed, from the experience of many cases, to open these little depots as soon as fluctuation becomes perceptible. This gives but little pain, and a prick of a lancet, made by mistake into a swelling, not arising from an abscess, is a matter of no importance. The incision should be large enough to allow the abscess to empty itself completely and at once with the aid of slight pressure.

Almost invariably, even when neglected, they terminate by getting well; so that, between spontaneous and artificial opening, there is in the upshot only a question of time, of a longer or shorter period, of a good or of a better result. The rule to be followed appears to me to be this. Open them early, and as early as possible, if the patient be courageous, docile, and not very sensitive; but wait and let the morbid process advance, if the idea of an instrument terrify the sufferer.

Whether opened artificially or not, both before and afterwards, subcutaneous abscesses of the areola require, as topical remedies, nothing but emollient poultices, especially of linseed; and with these applications, those that have been opened by the knife gently dry up and cicatrize in a few days; but those that have opened spontaneously, are accompanied occasionally by a loss of substance, from which there results a wound with ragged, uneven, thin and excavated borders. If cicatrization be long in taking place, it may be useful to apply a stick of nitrate of silver once or twice in the course of a week. In both cases poultices cease to be useful so soon as there is no more purulent discharge, and the solution of continuity is reduced to a simple surface. Diachylon plaster, or a dressing of mercurial ointment, renewed each morning, should form a sufficient application afterwards.

The following is an example of abscess of the areola, showing all the simplicity and usual mildness of the affection.

Case 1.—*Right breast; female recently confined who had suckled for several days.*—Margaret Feuillet, æt. 24, a sempstress, in the habitual enjoyment of good health, entered St. Catherine's Ward, No. 29, on the 11th of July, 1837. Two years before she had been confined of a dead child, and was brought to bed again two months ago. For three weeks she endeavoured to nurse, but was obliged to give it up on account of the right breast becoming swelled and painful. There were shooting pains and a red swelling underneath the nipple, and some fever and sleeplessness were combined with the local symptoms. (Linseed poultices.)

At the visit on the 12th of July, there was noticed underneath the right nipple a tumour as large as a nut, soft and fluctuating in the centre, but still hard, and as if much thickened at the circumference. The rest of the mammary region was unaffected, and the general health good. The point of a straight bistoury was plunged into the little swelling. Two spoonfuls of thick

creamy pus immediately flowed out; poultices were still continued, and the patient kept on moderate diet. On the 13th, there was neither pain nor inflammation remaining, and the abscess had already cleansed itself; the cicatrization of the wound was effected by the 16th, and on the 18th the patient left the hospital.

We ought, however, to be aware that areolar abscesses are sometimes more complicated, more serious, and of longer duration; but in such cases they have had their origin in a diseased condition of the breast itself.

The following is an example of it:

Case II.—*Abscess of the areola in a woman who had been recently confined, and had attempted to nurse; the mammary gland itself being affected primarily.*[1]

It is plain also that abscess of the areola may be complicated with parenchymatous, or even with deep-seated abscess, in which case it should no longer be classed with purely subcutaneous abscess.

B. *Subcutaneous Abscess, or Abscess of the Cellulo-fatty Tissue.*—When outside the areola, superficial or subcutaneous abscesses arise and progress in exactly the same manner as abscess of the subcutaneous tissue of the limbs, abdomen, or of the other parts of the chest. The tissue in which they are situated being areolar or matted, like the general superficial fascia, has a constant tendency to circumscribe them. We scarcely ever find this species of abscess extending in the form of patches, or by infiltration or diffuse phlegmon, either on the surface, or beyond the circumference of the breast. The size that they may attain is occasionally considerable. They may, for instance, become as large as an egg, or as the fist, or even of still greater dimensions, although as a general rule they are small.

Subcutaneous abscess is found more usually at the external and inferior half of the breast than elsewhere, and next in frequency they are met with above and below. Women, who have voluminous and heavy breasts, exhibit, so to speak, but these two varieties; and the same remark applies to those whose breasts are pendulous or ill supported. This arises from the dependent

[1 The details of the case have been here omitted.—Ed.]

position of the organ in the former, and in the latter from the dragging which the weight of the breast produces on its root.

Though abscess of this kind is usually single, it is yet not rare to find two, or even a larger number, in the same mamma. I have seen as many as six in a woman who had been attacked with flying erysipelas; and another patient had four as the termination of erythema nodosum.

When single, they are generally unconnected with lactation or pregnancy, or with disease of the gland, and depend upon external causes, upon physical or mechanical influences, or upon some general constitutional tendency. In the puerperal condition, on the other hand, subcutaneous abscesses are sometimes multiple, for in this condition they are frequently only the terminations of parenchymatous inflammation. When multiple, their base is usually yielding, and regularly circumscribed. The skin over each of them is everywhere nearly equally thin, and if independent of the gland, they seem to have their seat in the most superficial layer of the subcutaneous fascia. Single subcutaneous abscesses, however, usually soften only by degrees from the centre to the circumference, preserving at the same time a pretty firm, diffused, and ill-defined base. The conoid appearance belongs to them rather than to multiple abscesses, which latter are more particularly globular, hemispherical or ellipsoid.

To sum up, single subcutaneous abscesses have this peculiarity, that they have as great a tendency to make their way towards the glandular tissue, and to the parietes of the chest, as to the skin. This depends upon the fact that the organism scarcely ever abandons any portion of the general laws originally impressed upon it.

Thus the subcutaneous layer of the breast, which is almost wholly areolar or matted in character, still reserves, as it approaches the glandular tissue, a remnant of lamellar structure, in which, in some cases, inflammation is set up. The consequence is, that in these deep-seated laminæ, this stratum, when once inflamed, becomes the seat of abscesses, which are susceptible of diffusion, and reach the integuments only after a tedious and painful process of ulceration; whilst in abscesses that are just under the skin, there is less difficulty in opening externally, than in burrowing towards the mamma.

Symptoms.—The existence of subcutaneous abscess is an-

nounced, in the first instance, by the symptoms of phlegmonous abscess in general, by the projection, thinning, and livid or bluish tint of the skin. In order easily to detect the fluctuation, it is useful to fix the breast against the chest with the palm of one hand, and then, with the other hand and some fingers of the first, to examine the tumour.

The same end is attained by grasping the breast in one of its great diameters, as was pointed out in speaking of tubular or furuncular abscess. If, when the breast is well applied to the front of the chest, the abscess jut out, and there be a conical projection on the exterior, we may be sure that the pus lies underneath the skin, and not under the gland.

We can have no difficulty, except in very stout women, or where the breast is at the same time swelled, either from the process of lactation, or from genuine lactiferous engorgement. Under such circumstances, the redness of the abscess may be confounded with that resulting from the natural engorgements of the part, and the fluctuation may be so deep and so vague as to render it almost impossible to avoid confounding it with the fungus-like sensation communicated by an engorged breast. To guard against any mistake on this subject, it is enough to recollect that the abscess must have been preceded by inflammation for a week or two, and that it is accompanied by deep-seated, permanent pain, by projection, redness, and marked thinning of the skin in some definite point, peculiarities which we nowhere find to the same extent in the other portions of the mammary region.

The natural termination of subcutaneous inflammation and superficial abscess of the breast is similar to that of inflammation of the same kind generally, as has been pointed out in a former chapter. Such abscesses scarcely ever disappear by absorption or by metastasis. They open spontaneously by ulceration, like other inflammatory abscesses, if they should not have been evacuated artificially, in the hope of thereby curing them more speedily. When left to themselves, they sometimes burst at an early period, but sometimes not until very late. I have seen this occur before the termination of the second week, and have also seen it delayed till the end of a month. If we do not interfere they may spread, form sinuses in different directions towards the axilla, the hypochondrium or the epigastrium, whilst all the time they continue subcutaneous, and even give rise to diffuse inflammation. When primary, they are not serious, and soon get well; but

when secondary, and following glandular inflammation, they last much longer. Although the support afforded by the superficial and deep cellular tissue, at the circumference of the breast, generally interferes with their progress, they may, nevertheless, make their way round some point at the border of the gland, get between it and the chest, and thus give rise to true deep-seated abscess.

Case 1.—Wilson, a healthy young woman, 20 years old, was confined on the 4th of May, 1849. On the 15th of June, she experienced slight pain at the lower part of the left breast, where examination showed the existence of a swelling. On the 22d, when she entered the hospital, there was a lump consisting of two lobes, and nearly as large as a hen's egg, at the lower part of the left breast. It was hard, moveable, not adherent to the thorax, and apparently unconnected with the gland; it was situated neither between the breast and the thorax, nor between it and the skin, but at the lower margin of the mamma, where the skin was red.

On the 27th, fluctuation being present, an incision was made, and some natural pus evacuated.

All went on favorably till the 2d of July, when the whole breast became painful, the skin red and marbled, with heat and lancinating pain extending to the axilla. At the same time there were all the constitutional signs of acute inflammation —shrivelled features, great thirst, a dry hot skin, a red tongue, and a quick pulse.

On the 4th, the general symptoms and the vomiting were succeeded by diarrhœa, and the lips were dry and dusky. Both breasts were uniformly red, but the left more so than the right; and where the redness ceased, there was an elevation of the surface more manifest to the touch than to the eye. The right breast, which throughout was less red and less painful than the left, exhibited at its lower and external portion a blackish spot, like a spot of ecchymosis, the size of a two-franc piece, having a prominent whitish centre, which gave exit to some serum.

On the 6th, the ecchymosis was larger, its borders blackish and festooned; and the skin around the slough greyish, shining, and studded with little whitish vesicles, not elevated.

On the 12th, the diarrhœa and other constitutional symptoms having persisted, the slough came away, leaving a red, painless

surface, nearly five inches in its transverse diameter, and three inches and three quarters from above downwards.

On the 14th, though the vomiting and diarrhœa continued, the erysipelas had completely disappeared.

On the 18th, the anterior border of the left axilla, which was painful before the setting in of the erysipelas, became the seat of pretty acute inflammation, which extended to all the neighbouring parts as high as the clavicle.

On the 21st, fluctuation being evident at the anterior border of the axilla, some healthy pus was evacuated by incision.

After this the general and local symptoms gave way, and, in spite of another attack of vomiting and diarrhœa, the patient got well by the 17th of August.

Treatment.—Abscess of the cellulo-fatty tissue demands the discontinuance of suckling even less urgently than abscess of the areola. Often unconnected with the disease, the gland may continue its functions without any inconvenience to the child. The engorgement, inseparable from the process of weaning, would certainly increase the irritation in the purulent depot, and might prove the source of fresh suppuration. If the subcutaneous abscess have its origin in a diseased condition of the breast, the question of weaning assumes an entirely different aspect. It will be discussed when considering glandular abscesses.

These superficial abscesses ought to be opened, unless the patient refuse to submit to the operation. In such cases, I sometimes succeed in getting rid of the depot, by covering it with a large blister, repeated in eight or ten days. The blister has here, as in all the other inflammations, the advantage of hastening suppuration when inevitable, or, at all events, of softening the depot, of thinning the skin, of bringing about absorption and resolution, if still possible; and, what is still more surprising, of markedly diminishing pain. When we have the option of doing that which is most advisable, we should do wrong to wait for complete suppuration and the maturity of the inflammation. Such depots do not usually lead to sinuses or burrowings. When once opened, they contract, rapidly close, and cicatrize all the better, if their walls are neither too thin nor too much excavated.

We need not be uneasy about the induration in the neighbourhood, as it is not long in disappearing.

Subcutaneous abscesses, like those of the areola, should be

opened by a large incision, as soon as we are satisfied of the existence of fluctuation. I may add, that a bistoury, plunged into the centre of nascent inflammation, has seemed to me to arrest its development and to favour its disappearance. Subcutaneous incision, which has been recommended since I first expressed this opinion, can act in no other way, and in these cases does not deserve a preference over simple puncture. The incision into these abscesses should be at the most dependent part. If the skin be much thinned, and the pus have had time to channel out sinuses, we must make several incisions in those situations where it tends to stagnate. If the abscess be large, and the opening into it be much less than an inch in size, it is useful to put a bit of lint, or of linen covered with ointment, between the lips. In this way we prevent the closure of the opening before the abscess has dried up. If the opening be large, or we have been obliged to make several incisions, this precaution is unnecessary; but in all cases we must not neglect to employ large poultices, renewed morning and evening until the suppuration has ceased. When there only remains a simple wound, common dressing, or a layer of *onguent de la mère*,[1] renewed each morning, may be substituted for the poultice, and we may have recourse to compression to get rid of the neighbouring swelling.

Particular examples best illustrate the progress, symptoms, and duration of subcutaneous abscess in the breast, especially in those who have been lately confined.

Case II.—*Subcutaneous abscess, of eight days' duration, in a person who had been recently confined; cure at the end of a week.*—Peltier, a housemaid, æt. 21, came into the hospital on the 22d of November, 1843, for a tumour in the breast, from which she had been suffering for a week. She had been confined about a month, and had attempted to suckle, but had discontinued doing so after the second or third week, in consequence of pain in the left mamma. When admitted, there was marked tumefaction of the left mammary region, and a red, painful, acutely inflamed swelling below and on the outer side. On fixing the base of the mamma against the parietes of the chest with one hand, and making an examination with the other, manifest fluctuation was detected in the tumefied spot, and it was readily seen that an abscess existed between the integument and the gland. Incision

[1] Vide p. 23, note, for the composition of l'onguent de la mère.

into the thinnest and most dependent part gave exit to one or two spoonfuls of creamy well-formed pus. Poultices were applied, and in a few days the discharge lessened, and finally ceased altogether. On the 30th of November the patient went out well.

This case illustrates subcutaneous abscess in its greatest simplicity, the healthy constitution of the patient, the integrity of the mamma, the absence of reaction as regards the suckling, the regular progress of the inflammation without complication of any kind, and the subsequent formation of serum, which shortly announced the approaching cure. The next case is rather less regular in its progress, on account of the time which elapsed between the appearance of the serum and the complete cicatrization of the wound.[1]

When the subcutaneous abscess arises from inflammation of the lobules of the gland, it is not uncommon to find several following each other.

Case iv.—*Two subcutaneous abscesses successively in the right breast, in a person recently confined who had attempted to suckle.*[2]

The duration of the disease, and in particular of the abscesses, scarcely being more than a fortnight, is of itself sufficient to place beyond question the fact of their being unconnected with the mammary gland.

Case v.—*Multiple subcutaneous abscess in the right breast of a person who had been suckling.*[3]

Subcutaneous abscess may arise, as has been shown in the article on phlegmon, not only in connection with pregnancy, childbirth, or lactation, but also as a consequence of disease and suppuration in the neighbouring parts.

Case vi.—*Subcutaneous abscess in the left breast, in a recently confined person who had attempted to suckle.*[4]

Case vii.—*Abscess, with considerable burrowing in the right breast, and along the back, in a person recently confined; death of*

[1] The details of the case No. iii have been omitted.—Ed.]
[2] The details have been omitted.—Ed.]
[3] Ibid.] [4] Ibid.]

the patient.—Geneviève Denys, æt. 21, an ironer, came into the hospital on the 24th of January, 1840, with immense suppuration and extensive dissection of the integuments of the chest. She was of rather delicate habit, and had been confined twelve days before, a fortnight previous to the due period. She stated, that on the very day of her confinement, an abscess formed at the lower part of the right side of the neck, which rapidly spread in all directions, that is to say, towards the back, under the integuments of the chest, and in front of, and underneath, the right breast. There was, however, some doubt as to the original situation of this suppuration, for it was not proved that the inflammation began towards the neck more than towards the breast. However that may be, the skin of the upper part of the mammary region rapidly sloughed, leaving a vast light-coloured wound. There were three other wounds,—one in the back, one at the base of the neck, and the third on a level with the first rib, resulting from so many incisions made to give exit to the pus. All the integuments of the back and of the upper half of the chest were of a pale colour, detached and elevated in several portions of their extent. The three openings discharged an abundance of sanious ill-formed pus. There were also vast sinuses in the neighbourhood, and the sloughed skin was extensively detached in front of the breast. There was likewise a threatening of suppuration at the side of the shoulder. Notwithstanding this condition of things and considerable prostration, the patient had no fever, and retained her appetite. She took the extract of krameria internally, applied poultices, and was ordered a light diet. On the 27th of January, fresh openings having been made at different parts of the separated integuments, there flowed away an immense quantity of fluid, sanious and fetid pus. The wounds continued to discharge abundantly, and the general condition to become worse and worse. On the 2d of February, there was diarrhœa and sleeplessness, but at the same time the local condition seemed to improve, whilst the general symptoms became graver. Nutritive and other sorts of astringents, the diascordium,[1] preparations of iron, and so on,

[1 The Electuaire Diascordium (Electuarium Opiatum Astringens) is thus composed:

℞ Dried Leaves of the Scordium (Teucrium scordium, Water Germander, ℥jss;
Flowers of Red Roses (Rosa gallica), ℥ss;
Great Bistort or Snake-weed (Polygonum bistorta), ℥ss;
Gentian Root (Gentiana lutea), ℥ss;
Common Tormentil or Septfoil (Tormentilla erecta), ℥ss;—

failed to check the wasting of the vital powers, and on the 14th of February the patient died.

At the autopsy, all the skin covering the right half of the thorax, and a portion of the root of the neck, was found to be detached. The pus had not burrowed amongst the muscles or beneath the mamma, which lay in close contact with the chest, but was completely deprived of its subcutaneous bed, as if dissected out. There was no effusion into the cavities of the body, and nothing material was found in the viscera to explain the patient's death.

As there was neither pain nor evidence of inflammation previously existing in the neighbourhood of the neck, and as it is possible that deep-seated inflammation in the breast had not been recognised in the first instance, I imagine that this vast abscess originated in the mammary gland, and being at first circumscribed in the direction of the clavicle, that it had ended by spreading and producing diffuse gangrenous inflammation, a sort of milk fever (*inflammation laiteuse*) or unhealthy phlegmonous erysipelas.

The following is a case in which it is evident that the abscess made its way to the mammary region from a totally different locality.

Case viii.—*Vast abscess of the right breast, consequent on purulent formations in the axilla.*—Clorinde Talon, æt. 24, a glove-maker, came into the hospital on the 22d of January, 1844. She had suffered from abscess in the axilla, consequent on chilblains, which had been opened and which discharged by means of a fistulous

—Barberry Berries (Berberis vulgaris), ℥ss ;
Ginger (Zinziber officinale), ʒij ;
Long Pepper (Piper longum), ʒij ;
Cassia (Laurus cassia), ℥ss ;
Cinnamon (Laurus cinnamomum), ℥ss ;
Marjorum (Origanum dictimnus), ℥ss ;
Benzoin (Styrax calamita), ℥ss ;
Galbanum, ℥ss ;
Gum Arabic, ℥ss ;
Bole Armenian, ʒij ;
Extractum Opii, ʒij ;
Honey of Roses, purified and reduced to the consistence of common honey, lbij ;
Sherry Wine, ℥viij.

Dissolve the opium in the wine, add the liquefied honey of roses, and subsequently, by degrees, all the other ingredients reduced to a fine powder, beat the mass so as to mix the whole exactly, and preserve the electuary in jars.

The proportion of opium is about half a grain per drachm.—Ed.]

passage. A fortnight ago a fresh incision was made into the abscess, but the breast began to swell, and the patient applied at the hospital.

On the 29th of January, an abscess of the breast having completely formed, it was opened by free incision. A sort of hard cord ran from the breast to the axilla. She rubbed iodide of lead ointment into the indurated parts, and poulticed the abscesses.

Nothing remarkable occurred until the 15th of February, when the fistulous passage between the two abscesses seemed to inflame, and became the seat of a vast purulent collection.

On the 20th, an incision was made along the whole fistula, and bits of charpie being inserted, the wound began slowly to heal, but it was not until the 7th of April that the patient was well enough to be discharged. From the first moment until the last the suppuration was maintained in the subcutaneous tissues, between the integuments and the breast, without once spreading beneath the gland or amongst the muscles.

§ 2. SUBMAMMARY ABSCESS.—These, like subcutaneous abcessses, are idiopathic or symptomatic: idiopathic when resulting from inflammation set up beneath or in the substance of the breast: symptomatic when arising from changes in organs more or less distant. I have seen an abscess form beneath the mamma, consequent on the inflammation and suppuration of the perichondrium of a broken sterno-costal cartilage. In many other patients the abscess has been caused by some long-standing change in the subjacent ribs. In 1834, I met with an enormous submammary abscess communicating with the bronchi, which followed an attack of pneumonia of seemingly mild character. In 1836, there was a woman in La Charité in whom the abscess originated in a tuberculous mass under the sternum. At the same time a young girl had one which arose between the anterior border of the right lung, and the costal pleura. Pulmonary phthisis is a source of them which should not be forgotten, and of which I have witnessed many examples. I have also seen a great variety of submammary abscesses arising from various diseases of the chest, in which instances, in short, they were little more than depots from gravitation.

Another class of submammary abscesses belongs to diseases of the breast itself. When of long continuance, suppuration of the glandular tissue may, and in fact often does, reach the deeper-

seated parts. By following the fibro-cellular meshes of the gland these subcutaneous abscesses become deep seated, and, as has been already stated, abscesses of the circumference of the breast may penetrate between the gland and the thoracic parietes.

In order to appreciate the importance of these distinctions, we need only reflect on the differences in the cases arising from variations in the seat of these diseases.

No one, in fact, would propose, that so far as prognosis and treatment are concerned, abscess symptomatic of disease of the chest should be placed in the same class as idiopathic submammary formations.

Compelled to pass through, and more or less to interfere with, the secretory textures before becoming deep seated, the abscesses which only reach the submammary tissues, after existing in the subcutaneous layer, or in the interstices of the lobes of the gland, entail more serious consequences than idiopathic deep-seated abscesses properly so called. This class of suppurations become developed under very different causes and conditions to the former, although evidently inflammatory in character. I have seen them arise from a contusion, or from some unknown cause, in women who have long ceased to suckle: in consequence of a chill, in women who have only nursed on the affected side, and in others who had suckled but for a few days. Usually they occur on one side, but sometimes on both at the same time, and occasionally also previous to confinement, as in the following amongst other instances.

Case 1.—*Submammary abscess in a pregnant woman; poultices; incision; rapid cure.*—Henrietta Ferrand, æt. 20, seven months pregnant of her first child, after some general indisposition, found that, three weeks ago, her breast swelled and became painful. When admitted into the hospital it was as large as the head of a fœtus, but no fluctuation could be detected. On the 15th of February, fluctuation was discovered in a spot where the finger perceived a sensation as if the lobules of the breast were separated beneath the nipple. An incision gave exit to a large quantity of healthy pus, and on the 26th, the patient was discharged.

The next case is remarkable on account of the elasticity which the gland preserved during the whole period of the disease.

Case II.—*Deep abscess of the right breast, and later one of the left, in a newly confined person who had just commenced to nurse.*[1]

Generally speaking, deep-seated abscess of the breast is distinguished by pretty marked characters. Usually large, it often occupies the whole base of the mamma, and its formation is pointed out by irregular shiverings, by partial perspirations, and by a feeling of weight and distension. The breast is elevated, tense, hot, scarcely at all nodulated, but somewhat smooth, and of a peculiar elasticity. If we try to depress it, we perceive that it rests upon a basis of little firmness, upon a collection of fluid which yields to pressure towards the ribs, or from before backwards. In many women the depot rapidly attains a large size. I have seen it contain nearly as much as a quart of pus.

We have in such a case a vast bag, which detaches and pushes the breast before it. Its shape, a little convex, formed rather of elastic or flexible than of firm and solid walls, makes the fluctuation less easy to perceive than in the other varieties of abscess. Confined in one direction, the pus displaces the opposite side, or some part of its circumference, and thus does not yield the clear impulse which characterises fluctuation. The surgeon should here, more than ever, take into account the degree and intensity of the pre-existent symptoms in order to establish his diagnosis.

If, after a week of inflammatory symptoms, the general reaction, redness, and pain diminish, without the tongue becoming cleaner, or the breast subsiding, we may feel sure that an abscess has formed.

There can be no doubt of it, if there be at the same time a little puffiness either around or on the surface of the breast, and especially if this œdema preserve the impression of the finger, and a certain degree of redness accompany it, and if for some days there has been indistinct shivering towards nightfall.

Whether from the inflammation speedily becoming adhesive, or from incompleteness of the submammary space, or from some other cause, it may happen that, instead of becoming diffuse, the abscess will rapidly become circumscribed, or several may form which may either communicate with each other or remain independent.

Sometimes also this kind of abscess proceeds unsuspectedly, without occasioning much pain.

[1 The details have been omitted.—Ed.]

Case III.—*Swelled breast, red, painful, hot and fluctuating; abscess opened spontaneously; large quantity of pus; compression; poultices.*[1]

Case IV.—*Submammary abscess of the left side, almost painless.* —Chevalot, æt. 19, a bonnet-maker, of good constitution, has been confined a month. About a week ago the mamma became slightly painful and swollen. At the present time the pain is still less severe, but the breast remains large.

June 25th, 1842.—The breast is uniformly enlarged, and as if pushed forwards. There is slight redness of the skin, dull, heavy pain, and examination affords the sensation as of an unyielding mass resting on a moveable basis. Fluctuation is especially manifest over the ribs. No constitutional symptoms.

The absence of bosses, of thinning and redness of the skin, or of superficial fluctuation, and the progress of the affection, all point to submammary abscess.

An incision was made towards the outer side, and about two wine-glasses of well-formed pus flowed away. A poultice was applied.

On the 30th, compression was effected by means of a bandage, but caused so much pain, that it had to be discontinued on the day but one following.

On the 5th of July, a new collection of pus had formed on the surface of the breast, which was evacuated by puncture. A tent inserted.

On the 10th, an opening had formed near the incision in the areola, and seemed to communicate with the posterior portion of the breast. General condition satisfactory.

On the 14th, a furuncular abscess had formed in the axilla, and burst of itself.

The fistulous passage commenced to close, and on the 20th, when the patient left the hospital, there was only a slight discharge remaining.

With this form of abscess the breast may, in some cases, no longer be raised in its totality—the deposit may show itself, like a little boss, at some one point of the circumference of the organ, or it may remain in the centre, and raise up some part in front in such a way as not to be easily recognised. Such varieties, however, can

[1 The details have been omitted.—Ed.]

only be considered as exceptions, for acute submammary abscesses generally show themselves with the characters mentioned above.

Prognosis.—On account of its seat, submammary abscess may become a serious disease if not properly treated. Although the lamellar bed, in which it originates, becomes mixed up towards the circumference of the gland with the subcutaneous fascia, the pus nevertheless sometimes makes its way by means of a sinus, and thus brings on phlegmonous erysipelas, either of the abdomen or neck, or of the axilla. The suppuration may even induce something still more serious. Arrested at the circumference of the breast, and hemmed in in front by the mamma, it may involve the bones and cartilage or the intercostal muscles, disorganize them, and burst into the pleura or into the anterior mediastinum. These complications are no doubt rare, but they have been observed, and indeed I have myself witnessed them several times. A submammary abscess, merely from its vicinity to the parts, may also occasion purulent inflammation of the pleura, and consequent empyema.

Shirt-stud Abscess (Abcès en bouton de Chemise).—Deep-seated abscesses often end by extending from behind forwards, following the septa of the breast, and showing themselves under the skin so as eventually to give rise to one or more subcutaneous abscesses without losing their original character of submammary suppuration. Nothing, in fact, is more common than this form of deposit in the mammary region. There is a cavity of greater or less extent between the integuments and the gland—another larger cavity separates the mamma from the chest; and the two communicate by a passage or foramen, which is generally narrow, the whole having the exact appearance of a shirt-stud.

Submammary abscesses, therefore, deserve particular attention. Although it be true that they readily make their way to the circumference, it is equally true that they may take another direction. Those which open, or are evacuated in the most favorable situation, that is to say on the outer side and below, usually get well with ease and rapidity. When the opening is in the neighbourhood of the nipple, the cure is longer and more difficult. If a subcutaneous abscess has been allowed to form and grow large before being opened, the case becomes still more serious, especially if, in place of one communication between the two collections, there are several. In such instances, the prognosis resembles more that of parenchymatous than that of submammary abscess

properly so called. Sometimes also a subcutaneous abscess becomes deep-seated from the same causes.

Treatment.—When a deep abscess has formed, it is mere waste of time, and involves our incurring some risk to delay with internal or topical remedies. Compresses, poultices, embrocations, and ointments, can have no other object than to satisfy the patient, or slightly to favour the thinning of the skin, if we do not consider it advisable, or the patient decline to submit at once to the knife; in other words, incision affords the only essential or efficacious remedy.

A large blister, covering the whole breast, may, in some rare cases, obviate the necessity of cutting instruments; but it is a remedy which only occasionally succeeds, and is to many women as terrifying and painful as an incision.

Compression, about which I intend to explain my views later on, is attended with no other advantage than to deaden the pain and slightly to soften the walls of the abscess, a gain which is counterbalanced by the danger of favouring the separation of the tissues and the formation of purulent sinuses towards the chest.

The opening of deep-seated abscess requires certain precautions, which vary according as the depots are still limited to the tissues under the gland, or have traversed the latter, and show themselves under the skin anteriorly.

Case v.—*Deep-seated secondary abscess; left breast; incision; poultices; cure in twenty-two days.*[1]

Case vi.—*Deep abscess; en bouton de chemise; right breast; in a recently confined woman.*—Bellette, æt. 28, admitted into La Charité on the 2d of March, 1846. Formerly robust, she grew pale and feeble after her confinement, which had occurred seventeen days before. Two or three days afterwards, the breasts, especially the right, became swelled and painful. On admission, it was at least as large again as its fellow. Near the nipple and areola was a reddish swelling with thin fluctuating walls, a sort of bulbous projection as large as a pigeon's egg. A little opening, which the patient stated had formed during the night, discharged a large quantity of pus. The breast seemed to be completely raised from its bed, and to be composed of enlarged lobules, hard and painful on pressure. This condition had probably been preceded by fever, but the patient was of such limited intelligence that it was difficult

[1 The details have been omitted.—Ed.]

to obtain exact information from her. On the 3d of March an incision, effected towards the base and most depending part of the breast, gave exit to a large quantity of healthy pus. The suppuration continued abundant until the 20th, when it ceased, and she was discharged, some swelling of the breast still remaining. The abscess, deep-seated at first, had made its way through the gland from before backwards, and appeared externally, as is often found to be the case.

Case vii.—*Deep abscess of the right breast in a recently confined person who had commenced to suckle.*[1]

If there be no sinus or swelling in front, it is advisable to make the incision on the external side of the gland where the integuments are thinnest, or still better at the most dependent point.

This dependent point, which is usually situated below and on the outer side, may, however, be situated below and on the inner side when the patient habitually reposes on the side opposite to the suppuration. The place of election for the incision is on the outer and lower part of the circumference of the breast, or at the most dependent portion of the depot; but the place of necessity is indicated by the secondary purulent swellings, and may therefore be found in any situation in which the skin is thin, and the abscess only covered by red and altered integument. An opening in the place of necessity, being sometimes distant from the centre or the dependent part of the abscess, does not always obviate the requirement of a second incision or counter opening in the place of election. In short, all things being equal, we should prefer the latter course, which requires us, as much as possible, to avoid waiting for any indication for the other.

The incision should be large; the tissues may be divided to the extent of four fifths of an inch, or an inch, or even an inch and a half, without inconvenience; and it is better to make it perpendicular than parallel to the plane of the thoracic parietes, especially when it be situated in the place of necessity. There is thus less fear of its closing too soon. Several incisions of the same kind are advisable if there be abscess with marked thinning of the skin, whether at the circumference, or on the anterior aspect of the breast. These deep abscesses contain a large quantity of matter, and usually empty themselves completely. The conse-

[1 The details have been omitted.—Ed.]

quence is, that provided they be not complicated with any sinus, and there be no constitutional complaint, they rapidly dry up, and the patient gets rid of them in a week or two. I have seen cases in which the walls were completely united on the 3d or 4th day; and we may promote this, when the case is tedious, by means of a well-applied bandage and regular pressure.

Case viii.—*Submammary abscess, which had traversed the gland; incision; poultices; compression; eczema treated by sulphur baths.*[1]

If a submammary abscess traverse the gland in one or more points, and show itself either around the nipple, or in any other place, it is expedient somewhat to modify the treatment. Under such circumstances, in fact, it is not indispensable to open the collection at an early period. When, indeed, we succeed in emptying it by the openings at the circumference, the anterior sinuses do not the less continue in existence, or prevent the skin from ulcerating, or obviate the necessity of fresh incisions. We can rarely dispense with the employment of the knife to each purulent swelling. The opening in one is not by any means sufficient to give exit to the secretion of the others. In this condition the abscess is formed probably by a great primitive cavity situated beneath the breast, and by a number, which is sometimes considerable, of secondary cavities, situated under the skin, and forming in front so many distinct branches of the principal abscess.

In this form, abscess of the breast is difficult to cure. Whether we open the anterior swellings, or leave them to the efforts of nature, we must equally anticipate tedious suppuration. It is not necessary to employ large incisions in preference to simple punctures. It is, however, of consequence, that the breast be divided through a considerable portion of the depot, and in the whole extent of its thickness.

Case ix.—*Deep-seated abscess in the right breast, secondary formations of subcutaneous abscesses, in a recently confined person, who stated that she had received a blow in the breast, which had previously been painful.*—Godefroy, æt. 25, a young woman of healthy constitution, entered the hospital on the 20th of August, 1842, having been confined twenty-eight days before. She had

[1 The details have been omitted.—Ed.]

discontinued suckling after three days, but had not experienced any uneasiness in the mammæ. Ten days ago, the secretion of milk not being stopped, she contused her right breast against an arm chair, since which time it had become swollen and painful. On visiting her on the 30th, the mamma was found to be moderately swollen, red, hot, and separated or elevated from the surface of the chest. Below the nipple there was a little, soft, fluctuating projection, very painful, and of much brighter red colour than the surrounding part. There was also a sort of thickening around the breast.

An incision into the fluctuating tumour gave exit to a large quantity of pus. The sinus, by which the superficial abscess communicated with the deep one, being extremely narrow, a director was introduced, and the whole substance of the gland divided with a bistoury to the extent of an inch and a quarter. Lint was stuffed into the wound, and a poultice applied.

31st.—The patient has been much easier, and the breast was smaller, less hard, and less painful. Pressure still produced the discharge of much pus, and a certain quantity of milk escaped by the nipple.

September 10th.—As the suppuration still continued, and the pus appeared to stagnate in the deep-seated parts, compression of the breast was effected by means of strips of diachylon plaster.

The case progressed favorably until the 20th, when renewed pain obliged us to remove the bandages and resume the poultice. On the 21st, it was evident that small fluctuating bosses had formed afresh, one on each side of the nipple. They discharged a considerable quantity of pus, and though no more abscesses occurred, the patient was yet unable to leave the hospital until the 28th of October.

There can be no doubt here that several septa of the breast were involved in the deep-seated abscess at the commencement of the inflammation with which they were affected, and that thus had resulted the formation under the skin of the subcutaneous abscesses which successively arose. The first incision, aided by compression, had not obviated the necessity of two secondary incisions, and of the patient's long continuance in the hospital.

Case x.—*Deep abscess on the left side, subcutaneous swellings, in a recently confined female, who had attempted to suckle.*

Case xi.—*Deep abscess in the right breast, in a person recently confined, who had attempted to suckle.*[1]

The following case eliminates the natural tendency which deep-seated abscesses have to become superficial in newly confined persons.

Case xii.—*Abscess in the right breast following engorgement which existed for a year, and had followed labour.*[2]

In the next case, both breasts were successively attacked, and compression was of service in the treatment.

Case xiii.—*Submammary abscess in both breasts, in a person recently confined; incision; compression; rapid cure.*[3]

Thus it is seen, as has been stated already, that abscesses which have formed both behind and in front of the mamma are, as it were, strangled, by the glandular tissue, in the form of a shirt-stud (*bouton de chemise*), so that the pus, in passing from the deepest point to the exterior, has to traverse a sort of neck or narrow gorge. After incision, the elasticity of the gland may close the wound almost immediately, thus preventing all subsequent escape of the discharge. It is from this circumstance, also, that in other cases the openings continue for an indefinite period in the condition of fistulous ulcers, which are often very difficult to heal.

Deep-seated abscesses, with sinuses in the breast, have long attracted great attention. Hey, who was one of the first to notice them, has made them the subject of some interesting observations ('Practical Observations in Surgery,' &c., edition of 1814), and was so impressed with their obstinacy, that he recommended that the breast should unhesitatingly be divided in its entire extent through the whole length of the sinuses, with the

[1 The details have been omitted; but the author remarks respecting Case xi, that everything indicated that the swelling and subsequent purulent formation occurred beneath the breast, and not in the parenchymatous structure of the gland. The abscess was at first deep seated, and the incision by which it was evacuated having cicatrized too early, it became necessary to make a second at another point, in order to give exit to the new formation.—Ed.]

[2 The details have been omitted.—Ed.]

[3 Ibid.]

view of healing them up. This proceeding, although condemned by A. Cooper, is, in my opinion, the most certain of success, being sometimes the only one that can produce a radical cure; and it would be generally adopted, if it seemed less cruel to many patients, as well as surgeons. Having formerly witnessed its good effects, in the practice of M. Roux, I have myself employed it in a considerable number of instances, and my experience fully confirms that of Mr. Hey, of Leeds.

Case xiv.—*Deep-seated abscess of the breast; fistula for about eight months; extensive incisions; cure.*—A young woman, æt. 22, confined rather more than eight months, was admitted into the hospital of the Faculté on the 6th of November, 1825. There was dull and sometimes lancinating pain in the right breast, which was neither red nor sensitive on pressure, but was at least twice as large as its fellow. A small ulcer, two inches above and to the outer side of the nipple, daily discharged a considerable quantity of pus. An attack of acute inflammation, a month after confinement, had been the cause of this opening, since which time the condition of the breast had not improved. As the probe could only be passed in to a short distance, it was at first supposed that the patient was threatened with deep-seated inflammation, and this suspicion was confirmed by the fact that the mamma bulged out, and was so elastic as to give the idea of indistinct fluctuation.

Leeches, to the number of forty, thirty, twenty, fifteen, and ten, were applied every five or six days, without success. Poultices and liniments of all sorts gave but little relief. Six weeks were passed in this way, and the patient was then in a much less satisfactory condition than when she first entered the hospital. A fresh examination with the probe led to the discovery of a sinus, which traversed the breast, and terminated in a deep-seated abscess. To reach the bottom of this sinus, it was necessary to pass the bistoury upwards of three inches in depth: all the bands met with were severed, so that finally the gland was completely divided into two parts, and there was left a vast wound leading to a cavity beneath the mamma, lined throughout by a false mucous membrane. Reaction and sharp pain speedily set in and continued for eleven days; but these symptoms soon subsided, and the suppuration, which at first was very abundant, by degrees diminished. In about a month the cicatrization was

complete, and the breast had recovered its normal size and consistence.

It is not, however, at their commencement, when still acute, that these deep-seated abscesses require to be thus laid open, it is only when the openings which may have formed in them remain in the condition of ulcerated fistulæ. A grooved director and a straight bistoury suffice to lay the breast and purulent cavity into one; and the finger being then introduced into the wound, in like manner serves as a guide to divide the sinuses of the abscess; or, the director may replace the finger if there be only simple fistulous passages left. What is of importance is not to be sparing of the number or length of the incisions. The whole breast should be regarded as the cutaneous wall of an extensive abscess. It is also well that the lips of all the incisions should be kept separate, and that all the purulent cavities should be filled with dossils of lint smeared with ointment; so that the root of the abscess may heal up before the wounds in the gland. Such incisions are, moreover, much more frightful in appearance than in reality; the operation is rapidly executed, no important part is in danger of being wounded, the wounds generally heal rapidly, and finally, after the disappearance of the abscess, there remain only cicatrices which are not very apparent.

Case xv.—A young lady from Ermonville, confined a year, had suppuration in her right breast, which nothing controlled, and which had resulted from a submammary abscess, following labour. All her family were in great distress, and the patient, not knowing what treatment to try next, came at last to Paris. The abscess was in the outer half of the gland. Besides having been lanced, it had burst in three different points, all the openings, however, being situated above the most dependent part. One of these orifices had closed on several occasions, but suppuration had re-occurred at the seat of obliteration, and invariably these appearances of improvement had been followed by reaction and fresh suppuration. After many difficulties, many tears, and much hesitation, the patient, who feared I was going to remove her breast, submitted to have incisions made to the base of the sinus. I laid open the whole extent of the abscess, which was about three inches in length. Two small arteries required compression by means of dossils of lint, with which also the wound and the

abscess were both filled. There was no fever or subsequent reaction; the purulent surface cleansed itself by degrees, and the cure proceeded regularly, just as if it had been one of a large open wound healing by granulation.

If the patient's consent can be obtained, the preceding practice is that which I consider most advisable in shirt-stud abscesses, when the suppuration is of some weeks' duration, and compression having been tried in vain, the discharge stagnates at the bottom of the abscess. To recapitulate my views on this subject; I recommend, in the first instance, small openings in each little cutaneous swelling, and deep, extensive, and numerous incisions later on, if the preceding measures, aided by compression, do not succeed. Deep-seated abscesses of the breast should be opened—1st, when they are accompanied by fever and loss of sleep; 2d, when fluctuation is distinct. Astley Cooper, who states that we ought to make openings into them in several points, has not noticed that, by making one free incision at an early period, at the circumference and on the outer side rather than towards the front, we have a good chance of curing them like acute abscesses in the subcutaneous layer of the limbs.

Tents.—Instead of extensive incisions, it has been proposed to keep open an ordinary incision into a deep-seated abscess by introducing a tent of unravelled linen, or of lint covered with ointment.

It is of importance, in employing these tents, to avoid an error which, whether from inadvertence or want of reflection, practitioners often fall into; that is to say, it is necessary, in place of a simple seton, to take care and not place in the wound a regular plug. A strip of lint or linen, pushed by its middle to the root of the abscess, and inverted by the extremities towards the opposite angles of the wound, is what is most effectual, as we thus prevent the divided parts from approaching without interfering with the discharge of pus. With a cone, or a tent of lint, in the mouth of the abscess, the edges of the wound are apt to contract and unite around the foreign body in the intervals between the changes of the dressings, and it is thus impossible for the purulent cavity to empty itself.

Canulæ.—Some surgeons, and M. J. Cloquet in particular, employ a bit of elastic catheter instead of a tent, and it certainly is a practice that should be resorted to occasionally. It

is useful, for instance, when the sinus extends across the gland; for the bit of catheter, while it keeps patent the opening, and prevents the different anatomical layers from falling in and closing it, at the same time permits the pus to flow regularly through its orifice. When the opening into a large abscess is situated at the lowest point, the bit of catheter is still more useful, for it then prevents the weight of the breast from closing the wound, and thus confining suppuration. We must not, however, over-estimate the true value of this method. Alone, it is only a slight assistance when the abscess is tortuous, or when the wound is not situated at the most dependent part; and it is scarcely more useful in superficial or in purely glandular abscess. I have often resorted to it, and have come to the conclusion, that if it be sometimes of service, it is especially so when associated with compression. Whichever of the preceding methods we prefer, whether the tent or the canula, it is desirable, in submammary abscesses, to employ well-applied compression at the same time, taking care to leave open the orifices which are to give exit to the pus. To this subject I shall return after speaking of parenchymatous abscesses.

To sum up—1st. Deep-seated abscesses should almost invariably be opened at the circumference of the breast, so long as the gland itself does not appear to be involved in the suppuration, and the incision should be effected at the lowest part of the collection. 2d. If the abscess present itself as a prominent swelling in front, the incisions should be made at the fluctuating point, and need not be so extensive. 3d. In the last variety, the lips of the wound should be kept patulous by means of tents or canulæ. 4th. If, at the expiration of a week or two, the abscess has not dried up, compression should be substituted for the emollient applications. 5th. If compression fail, we may try stimulating injections, as the decoction of bark or red wine, or especially the tincture of iodine, either pure or diluted; or again, as recommended by A. Cooper, a mixture of three drops of sulphuric acid in an ounce of rose water. 6th. If resolution be still not considered impossible, we may give a chance to dissolvent ointments, compresses, or a large blister over the whole breast. 7th. Finally, when all these measures have failed, we must, without hesitation, resort to extensive and deep incisions, so as to free all the parts, as I pointed out above.

§ 3. PARENCHYMATOUS OR GLANDULAR ABSCESSES (LACTIFEROUS DEPOSITS).—Parenchymatous abscesses, the natural consequence of mammary adenitis, are of several species.

1st. Some, commencing in the milk-tubes, may be the effects of a sort of rush of the milk (galactorrhée). We meet with them occasionally about the turn of life; they are, nevertheless, almost exclusively associated with suckling, recent confinement, or pregnancy. They often begin by a simple lactiferous engorgement, and are then little more than a modification of inspissation of the milk (poil), a consequence of the distension of some of the secretory tubes transformed into cysts, the inflamed walls of which secrete pus, which, mixing with the milk, shortly constitutes a true milk abscess.

CASE I.—*Parenchymatous abscesses, numerous and successive in the milk-tubes and the lobes of the gland; spontaneous openings; incision; poultices.*—Rémond, æt. 29, housewife, who had been confined about six weeks, came to the hospital on the 21st of May, 1851, suffering from numerous successive abscesses in both breasts.

After an easy labour, six weeks before, she had commenced to suckle, but was obliged to give it up after a month, on account of an engorgement of both her breasts, which became painful, large, swelled, and hot, without, however, much alteration in the colour of the skin, especially of the right side. Two abscesses formed above and on the inner side of the right nipple, which opened spontaneously, and soon improved. The patient thought herself cured, when a similar occurrence took place in the left breast; and fearing serious illness, she determined to come into the hospital.

Present condition.—The two breasts are large, hard, and, as it were, irregular in the whole extent of the gland. The right breast presents two abscesses, which had opened spontaneously the day before, and the cicatrices of others which had closed some days before; but the gland is hard, uneven, lumpy, and painful on pressure, more so in some parts than in others. The skin, red and rosy in some situations, is violet coloured in others, with softened points, fluctuating and painful. The nipple has altogether disappeared in the substance of the gland.

On the left side, all the glandular structure is affected, being hard and lumpy, with a few soft and fluctuating lobules. This change seems to be seated on both sides, in the milk-tubes or lobules of the gland, and to have commenced in lactiferous engorgement of both breasts.

May 30th.—The two abscesses of the left breast were opened, and gave exit to thick yellowish pus mixed with streaks of blood. All went on well, and the patient thought of quitting the hospital, when, on June 10th, she was attacked during the night with sleeplessness, nausea and colic without purging, and the right breast became painful at its upper and external half.

On the 12th, there was manifest fluctuation, with pitting on pressure. Puncture gave exit to a quantity of inflammatory pus, with immediate relief to the patient. After this she progressed most favorably, until, on the 29th, the wounds discharged only a serous fluid; and although her breasts remained hard and swelled, the patient left the hospital of her own accord.

2d. Another class of glandular abscesses commences at first in the lobes, between the secretory lobules, in the substance of the septa, or of the bands and fibro-cellular divisions which separate the different portions of the breast. The question arises, whether the inflammation which gives rise to them begins in the cellular tissue which serves as a sort of envelope to each granule, or rather in the radicles of each excretory tube?

If decided information on this point was of importance in a purely clinical work, I should endeavour to show that glandular abscesses have their origin almost invariably in the excretory branches, in the finest and deepest-seated radicles of the milk-tubes, or, as we call them now-a-days, in the *acini* of the gland. I should proceed to show that the mechanism of inflammation of the mamma is the same as that of inflammation of the parotid in critical abscesses; but such a discussion, with what has already been stated in the article on mammary adenitis, would lead me beyond the limits imposed upon me, and would, I believe, prove unprofitable.

Parenchymatous abscesses then, usually multiple, are almost always developed under the influence of an irritation of the gland itself, although they sometimes depend upon previous inflammation or suppuration, either of the subcutaneous bed or of the deep-seated tissues, and perhaps also of the lymphatic system of the part. They may arise one after another to an almost infinite extent in the same person. Two, three, or six, may occur in common, but in other instances they follow each other only after some days, or after an interval of a week or two. I have thus, in the space of two or three months, seen 20, 25, 33, 41, 46, and

once as many as 52 in the same breast. The number of them will be more or less considerable according as, primarily or secondarily, a greater or less number of the milk-tubes, or lobules of the gland, have been inflamed. They may thus arise together, or one after another, according as the inflammation becomes established all at once, or by successive stages in the different tubes or lobules of the affected organ.

The mamma must, in fact, be susceptible of inflammation in one or more of its lobules and terminal points, either at the same time, or at certain intervals. There is no reason why, when it has commenced at one point, inflammation may not afterwards attack, in due course, a variable number of other parts. As the number of the lobules is indefinite, it may, of course, prove the same with the abscesses. The number of the lactiferous deposits prevents their usually acquiring so great a size as submammary, or even subcutaneous abscesses.

Commencing at first in the midst of elastic and compact tissues, surrounded by parts of little vascularity, they naturally tend to reach the purely cellular or cellulo-fatty tissues of the neighbourhood. Often, also, they become changed into subcutaneous or into deep-seated abscesses. However, even then they still differ, allowance being made for their primary focus, from the other two species in the circumstance that pushing the tissues from the centre towards the opposite surface of the organ, they have less disposition to increase in size, either under the skin or behind the breast, than primary, superficial, or deep-seated abscesses.

Parenchymatous abscesses are, beyond comparison, the most common variety of all. Abscesses of the mamma almost always commence by them, both in pregnant women and in those who have been recently confined or are nursing. Induced by irritation of the mammary gland, it is easily seen that this kind of abscess attaches to the function of suckling, and to the lactiferous secretion in general.

Does lactation act as a preservative against them? We must first inquire whether abscesses of the breast are more common in women who do not suckle at all than in those who fulfil their maternal duties to the last. There is an erroneous doctrine prevalent on this subject.

Misled by J. J. Rousseau, many physiologists, accoucheurs, and physicians fancy that by not suckling, a woman exposes herself to inflammatory abscess and all sorts of diseases of the breast.

Nothing can be more unfounded. Attentive consideration of the facts shows, in the most unquestionable manner, that women who nurse are more frequently affected with abscess than those who do not.

A recently confined woman, who does not suckle, gets rid of her milk in the course of a week or fortnight. The mammæ return to the condition of repose, and soon lose their tendency to inflammation. A nurse, on the contrary, is continually exposed to the causes of inflammation and abscess for a period of ten or fifteen months. With suckling, it is by no means in the first week or fortnight after the confinement that we generally find abscess of the breast manifesting itself; but it is in the course of that period that we must fear its appearance in women who will not, or cannot, suckle.

The mistake lies here, that women obliged to wean after having suckled for a certain period are evidently the most subject to milk abscess. The individual cases that I have collected, as well as those which may be read in this work, incontestibly prove the truth of the fact. Almost invariably we see them occur in women who, having suckled for a week or a fortnight, are obliged to give up this important function. In more than two hundred cases in my possession, there were not thirty in which parenchymatous abscess occurred in women positively unassociated with suckling. Those who nurse are exposed to this kind of abscess at all periods of lactation. Nevertheless it is rare for them to be attacked after the second or third month: it is in the course of the first four weeks that the thing occurs oftenest; and, as a general rule, parenchymatous abscesses are more to be feared in women who nurse as well as in those who do not, in proportion as the period of the labour is less distant.

As the *causes* of mammary adenitis were investigated when speaking of inflammation, they need not be recapitulated here. However, we should never forget that milk abscesses are almost always attributed by the patients, and generally correctly, to a chill, or a draught of air, or to cracks and retention of the milk, or to the voracity or feebleness of the child. The remains of old-standing inflammation, imperfectly cured, may also lead to their formation at the expiration of several months, although the patient be not suckling at the time.

Case II.—*Milk abscess in the right breast, the remains of in-*

flammation of both breasts, consecutive to labour, and to the commencement of lactation; cure.[1]

Symptoms.—Glandular abscesses progress more slowly, and last much longer, than those of the first and second varieties. Inflammation and suppuration, in fact, run their course more slowly in the secretory parenchyma, excretory ducts, and filamentous septa of the mamma, than in the deep cellular tissue, or in the subcutaneous layer. In such cases, from ten to fifteen or twenty days will often have elapsed before the suppuration has become fully developed. There is nothing precise or regular in the evolution of these abscesses. A week suffices for one case to arrive at maturity; another requires a fortnight or three weeks; and in some instances suppuration is not completely established before the expiration of a month. Mammary abscesses, in this primary character, then, differ essentially from subcutaneous and from deep-seated abscesses. They are ushered in by symptoms which it is not always easy to distinguish definitely from the two first varieties, and especially from submammary abscesses. However, if, in the first instance, the breast has been the seat of simple engorgement, either partial or general; if, following deep-seated, lancinating, and, as it were, widely diffused pain, we notice the appearance of little lumps at the end of six or twelve days; and if, moreover, some of these lumps appear to soften, and become fluctuating, without the whole organ assuming a puffy, semi-globular aspect, looking as if it were elevated from the surface of the chest like a bladder, we may affirm the existence of an abscess in the substance of the mamma.

Such formations occur usually beneath the nipple or around it, but I have often seen them originate in lobules far distant from the centre of the gland. If, from being purely parenchymatous, they become superficial or deep seated, we meet with them presenting two aspects,—the one somewhat tedious in character, as I shall presently describe—the other abrupt, in which they suddenly assume the course of subcutaneous or submammary abscesses; so that we have here the symptoms of glandular abscess in their antecedents, and those of deep-seated abscess in the actual or secondary condition of the disease.

In respect to form and evolution, this variety of abscess presents two circumstances important to be noted, viz., relative to

[1 The details have been omitted.—Ed.]

the total duration of the disease, and to the transformation which they frequently undergo spontaneously.

1st. *As to their duration.*—It has already been remarked, that as a positive rule glandular abscesses progress less rapidly, and continue longer, than deep-seated or subcutaneous abscesses. My present observations refer to the duration of the disease considered in another point of view.

Although they are often multiple, these abscesses usually occur successively, and not altogether, or at once; and the consequence is that the total duration of the disease is made up of the individual duration of each purulent formation. Suppose, for instance, that the second abscess be not evacuated until a week after the first, the third a week after the second, and so on with those that follow, it is evident that if, as often happens, there are fifteen, twenty, or thirty of them, several months may elapse before the complaint comes to an end. When each separate abscess requires occasionally several weeks to heal, we cannot be surprised to find so many patients remaining uncured until after two or three months of suffering.

As one of these formations generally acts as the predisposing, or even exciting, cause of the others, we can also understand how it is that the breasts of patients thus affected may be riddled with fistulæ, and covered with purulent points, so as to look, to a certain extent, like the nozle of a watering-pot.

2d. *Transformation—Shirt-stud Abscess.*—In cases in which subcutaneous abscesses traverse the gland, and become developed between it and the chest, and also when deep-seated abscesses perforate the gland from behind forwards, so as to make their appearance under the skin, we have a formation, the three portions of which represent a shirt-stud with tolerable accuracy. Now glandular abscesses are much more subject to this transformation than either the submammary or superficial varieties. In the secretory tissue, it is rare that suppuration does not ere long make its way towards the neighbouring cellular strata. In fact, in this tissue pathological changes take place more easily and freely than in the lobules of the gland, whose density and structure is unfavorable to the formation of purulent collections.

This occurs, because in almost all cases, no matter how large the purulent formation may be, the pus spreads and makes its way in the direction of the subcutaneous structures, where it accumulates and finally constitutes a superficial abscess. If the

inflammation has not reached the substance of the gland, the mischief stops there, and the case remains as a subcutaneous parenchymatous abscess; but if the deeper structures of the breast, or of some particular lobule, inflame, either from the very first or secondarily, the pus tends to be confined to the structure behind where the inflammation exists, and thus constitutes a deep-seated abscess.

These two varieties are met with together, and may remain independent of each other, in the same patient, just as if they had occurred in two different women. It sometimes happens, however, that deep-seated and superficial abscesses become so mixed up as to communicate completely with each other. The communication is then maintained by a sort of passage, sometimes very small, sometimes pretty large, occasionally very short and nearly straight, but usually of some extent, and in the shape of a more or less tortuous canal. Such, then, is the explanation of what is meant by a shirt-stud abscess.

Nothing can be easier to understand than this form of suppuration in the breast. The yielding, lamellar, vascular, easily separated tissues beneath the skin and mamma, are favorable to the establishment of every variety of morbid accumulation. The gland, on the contrary, being composed of globular corpuscles and granules, united together by compact tissue, does not easily yield to the formation of cavities, cysts, or collections of fluid. The interlobular septa perform the office, so to speak, of filtering the fluids. From beneath the skin, for instance, the pus cannot make its way underneath the breast until it has perforated one or more of the fibro-cellular septa of the gland, and the same remark applies to deep-seated abscesses which become superficial. So far, shirt-stud abscesses do not differ from those which I described in speaking of deep-seated and subcutaneous abscesses, except that they originated in the gland itself, and that the latter continues to be the seat of the disease, whilst in the other varieties it is only affected secondarily, and in some measure in consequence of the preliminary formation of the depots.

Glandular abscesses, however, instead of simply spreading beneath the skin or beneath the breast, may terminate by separating some of the lobules of the gland, and effecting a lodgment at one or more points between them, in the shape of new deposits, communicating more or less directly with the primary abscess.

The *treatment* of glandular abscess of the breast is complicated

enough, and it is absolutely indispensable, if we would treat them properly, to diagnose them correctly in the first instance; for it is in consequence of not having distinguished, or wished to distinguish, between subcutaneous and submammary abscess, that surgeons agree so little as to the best way of treating abscesses of the breast in general.

An early opening, useful in subcutaneous abscesses, is, as I have already stated, less advantageous in the deep-seated variety, and may even prove injurious in cases of parenchymatous abscess. All that has been said of the benefits of late incision, of spontaneous, and of small openings, is really only applicable to such depots as I am now speaking of; for they are the only varieties in which it appears that there is some advantage in not anticipating, but in giving time for the formation to open itself, or at any rate in occasionally opening them merely by puncture.

To temporise would, perhaps, be the best course, if a parenchymatous abscess never had any tendency to become deep seated or subcutaneous, but such a practice exposes the patient too much to the chances of these inconveniences for it to be exclusively adopted. However, it is advisable not to open glandular abscesses of the breast until the fluctuation within them is manifest. The incision may thus be reduced to a sort of puncture in each purulent swelling, in all cases in which the depots are of moderate size.

When, on the other hand, the abscess seems to be large or deep seated, it is advisable to make a free incision, and afterwards to keep the lips of the wound separate by means of a tent, or of the canula before mentioned. To open them at an early period is of no use, the suppuration occurs in too dense and too little vascular a tissue for a premature incision to expedite the unloading of the affected part, and moreover, to delay does not expose the patient, as in other abscesses, to rapid extension of the disease and to deep sinuses.

Before their complete maturity, incision gives but little relief, and temporising, whilst it allows the spontaneous opening of the abscess, is unattended with danger; so that if the patient dreads the knife, there is the chance of nature herself giving exit to the pus.

We ought also to bear in mind, respecting the incision, that we are often obliged to open a number of the same kind of abscesses, successively, at an interval of a few days or of a week. I have

no occasion to add that the dressing, both after spontaneous and artificial opening, should consist in the employment of emollient applications, in the first instance, and afterwards of ointment and pressure, as in the cases of superficial and deep-seated abscesses.

Open or discharging Abscesses.—The preceding observations apply almost entirely to abscesses which are still closed. Nevertheless, abscesses which have opened, far from being on that account *cured,* require in their turn skilful management. Whether they are spontaneously or artificially opened, it is well to leave them to nature for some days, and to treat them with nothing but simple poultices. However, when allowed to burst, it often happens that the opening is so small or so ill-situated, and the skin so thinned or denuded, that it soon becomes necessary either to make an incision such as we should have made in the first instance, or to destroy the degenerated integuments with caustic.

If, after eight or ten days, parenchymatous abscesses do not dry up, but continue to furnish a quantity of pus, it is because complications exist, either in their form or nature, or in the individual condition of the patient. In such cases the continuance of the disease depends upon their communicating with interlobular or submammary collections. However, as the presence of the milk and the existence of lactation is enough to induce suppuration; and as the natural condition of lying-in women, whether pregnant or nursing, modifies materially all the diseases that may affect them, it is necessary, in estimating one of these peculiarities, not to lose sight of the other.

If, then, a renewed incision seems to be called for, it can only be in consequence of the peculiar condition of the purulent formation, whilst everything also points out that the secretion of milk, and the general constitution of the patient, are not unimportant matters. Thus it may perhaps be useful to make counter openings in the thinnest or most dependent parts of the superficial collection, or towards the circumference of the breast, and opposite to the lowest part; and as respects the abscesses that have become deep-seated, it may also be of importance to lay into one sinuses running from the central part towards the intermediate suppuration in the substance of the gland, or also to incise freely the septum or sort of reticulated diaphragm which separates the submammary abscess from the subcutaneous wound in the hour-glass or shirt-stud variety. One circumstance that should not be forgotten is that incisions in the glandular tissue and wounds

running across the breast have always the tendency not exactly to heal or cicatrize, but to close, in consequence of the elasticity and natural toughness of the divided tissues; so that, to be of any use, they must be kept open by means of some foreign body introduced between their lips.

The milk does not keep up the abscess solely in consequence of the constitutional action by which it is itself produced, but more especially in virtue of its presence as a foreign body, for it often eventually gets into the abscess itself and mixes with the pus. As parenchymatous abscesses are seated in the substance of the gland, perhaps in the interior of the milk-tubes themselves, they can hardly be artificially opened without a number of the milk-tubes being also involved in the incision. Milk almost always makes its escape by the openings into such abscesses, so that we often see pure milk, or milk mixed with pus, escaping, and sometimes in the same patient pus and milk alternately, as also pus and milk more or less completely mixed. It is under these circumstances that the opening into the abscesses assumes the appearance of purulent fistulæ, or of fistulæ discharging milk.

The knife alone is insufficient in these cases; something besides surgical measures is required, so that we must have recourse to constitutional treatment in the first instance. Still local applications are not to be neglected, and consequently topical astringents, carrot, potato, or poultices of chervil and alum, or iodine ointments, are useful, but nothing equals in this way the efficacy of well-applied compression. I shall hereafter recur to the value of this last method, which is established by the accounts of fifty cases in the table.

General Treatment.—It is unnecessary to add, that if there exist specific diseases, certain diatheses, cachexias, or serious lesions of any other kind, so as to complicate the case, the surgeon must attend to them before everything else.

Case III.—*Parenchymatous abscess of the breast.*[1]

Parenchymatous abscess always produces disturbance in lactation, which either becomes more abundant, or else less active. In either case, the character of the secretion is necessarily altered; for as the formative organs is affected, the secreted product cannot be absolutely pure, and the child can scarcely remain well under such

[1 The details have been omitted.—Ed.]

alimentation. If the inflammation be seated in the interior of the milk-tubes, the pus may be swallowed in large quantity by the child. How can we be otherwise than anxious in the contemplation of such a circumstance, and how make up our minds to intrust a breast which is thus diseased to the mouth of a new-born infant? However, it must be admitted that the pus cannot be so dangerous as at first sight one might suppose, for it is certain that many children swallow it in this way and remain unaffected.

These parenchymatous abscesses also affect the milk in another manner. Without being itself seated amongst the milk-tubes, the suppuration may still mix with the nutritive fluid, either by endosmosis, or by means of some perforation, rupture, or morbid communication between the purulent depots and the excretory tubes of the gland.

It must therefore be admitted that a child, nursed by a woman suffering under glandular abscess, swallows a greater or less proportion of pus mixed with the milk than the mother would suppose; and this circumstance, which is pointed out by common sense, is also placed beyond question by microscopical investigation, and especially by M. Donné.

So long ago as the year 1836, I, as well as this microscopical observer, had ascertained that the milk of women labouring under these abscesses sometimes contained a considerable quantity of pus-globules. On placing a drop of milk from a diseased breast under a properly adjusted glass, we speedily become aware that, besides the diaphanous material forming its basis, the fluid is composed also of the regular circular globules belonging to the milk, and of globules with broken outlines which belong to the pus. Ammonia likewise destroys the one without altering the character of the other.

Not only in this way does the infant feed as much upon pus as upon milk, and continue to swallow an impure fluid, but it is also prevented from making use of the whole quantity of pure milk which is secreted by the gland. I have already remarked that the milk escapes from its proper tubes into the cavities or purulent sinuses just as well as the pus gets into the natural milk-passages; and thus a considerable portion of the nutritive fluid escaping with the pus from the wounds, is secreted without the child deriving any benefit from it.

The opinion which I formerly expressed, that to give the breast

to the child under such circumstances could do no hurt to the patient, seems to require modification; for I now believe it to be unquestionable, that by stimulating the secretion in suction, the child keeps up a degree of excitement which may act injuriously on the purulent collections, and tend to prolong the disease.

In short, in these cases it is better to deprive the infant of the breast altogether. If the secretion of milk seem to be too copious, it is more advisable to draw the breast by mechanical suction or by the aid of young animals, than to leave the operation to the child. This is a precaution the more requisite, because, if the formation of the abscess stimulate the secretion of milk on the one hand, the lactation itself, on the other, does not fail to react on the inflammation, and to augment the secretion of pus. There are, so to speak, two secretions—the one natural—the other morbid, which react upon each other, and tend reciprocally to stimulate and prolong each other; and hence arises the occasional obstinacy of abscesses of the breast, and the difficulty we so often find in closing them effectually.

The following are two examples of parenchymatous abscesses, —the one serious, the other rapid, though complicated in its progress,—such as I have met with in great numbers of instances:

Case iv.—*Severe multiple abscesses in the right breast, and a less serious one in the left, in a recently confined person who had commenced to suckle.*—Lambert, æt. 29, a well-made, healthy woman, the mother of four children, was confined on the 30th of December, 1836, and suckled her child for six days. At the expiration of that time she began to experience pretty acute pain between the shoulders and in the chest; she was cold, and felt some uneasiness in the right breast, having, as she thought, got a chill. However, she put on her stays, which increased the pain especially on the outer side. It soon began to shoot upwards, following the track of a bright red streak, without, however, there being any swelling in the axilla; but she had shivering every night, followed by fever and sweating. She applied poultices, but failing to obtain relief, she came to the hospital of La Charité on the 19th of January, 1837.

At this time there was a marked difference in the size of the two breasts; the left was depressed, about the size of half a fist, shrunk and flabby, and presented above and on the outer side a little hard, indolent swelling; the right was thrice as large as

natural, tense, fixed like a solid mass, and hard, especially on the outer side, towards the axilla: two or three lumps could be felt in it, which retained the impression of the fingers, and appeared to be the seat of obscure fluctuation.

Two incisions—the one two inches long towards the axilla, the other a mere puncture, an inch and a half distant from the first—gave exit to thick yellow pus mixed with blood. A tent was placed in the wound, and a poultice applied; the patient took gum-water and "*looch.*"[1] Two common enemata were administered. It was thus evident that the abscess which had commenced in the gland had become superficial and deep seated at the same time.

Suppuration continued for the next two days, when two hardish lumps formed above and on the outer side of the right breast, one of them surmounting the nipple; and in the left breast, which was somewhat painful, there appeared a small hard swelling on the inner side, which threatened deep-seated suppuration.

26th.—On the right side, between the incisions, there was a depression, at the base of which the gland seemed to be perforated, and there appeared to be an abscess behind communicating with the subcutaneous tissues. On the left side the swelling had diminished; the pulse was quick, full and hard. Three porringers of blood were taken away in the evening.

27th.—There was acute pain in the right breast, which was

[[1] There are two kinds of "*looch,*" Looch blanc (Look album) and Looch Huileux (Look oleosum). Their composition is as follows:

"*Looch blanc*"

℞ Sweet Almonds, deprived of their skins, ℥ivss;
Bitter Almonds, „ „ ℥ij;
White Sugar, ℥iv;
Oil of Sweet Almonds, ℥iv;
Powdered Gum Tragacanth, gr. xvj;
Orange-flower Water, ℥iv;
Pure Water, ℨiv.

Make an emulsion with the almonds, the water, and nearly the whole of the sugar, gradually add the gum tragacanth, mixed with the remaining part of the sugar, and heat the whole, so as to make a clear mucilage; then pour in the oil of sweet almonds in small quantities at a time, and continue to heat briskly. Finally, add the orange-flower water.

The "*Looch huileux*" is prepared in much the same manner, but without the almonds and sugar. Half an ounce of gum Arabic and an ounce of Sirop de Guimauve, are substituted for them.—Ed.]

red externally around the outer incision; and between the two wounds there was a soft and very sensitive swelling. Incision evacuated thick green pus.

28th.—The pain in the neighbourhood of the external incision was very great, and there flowed away grey fluid pus; the whole mamma was still red, but not so deep in colour.

29th.—The pain had ceased, and the redness was only in patches; the patient was comfortable, and had not been so well she said for two months before.

31st.—Yesterday morning the patient had a violent dispute with one of the attendants, and was shortly after seized with shivering, followed by fever and sweating. The right mamma presented behind and on the outer side a small hard swelling.

February 1st.—There had been some shooting in the tumour, and the skin was more red beneath it. Incision gave exit to bloody pus.

2d.—About midday there was another attack of shivering with chattering of the teeth for half an hour, and afterwards fever with perspiration until four o'clock. The breast was of a greyish red, and soft throughout, except on the outside, where there was still some hardness, but no pain. The left mamma seemed to have increased in size; it was still soft, with the exception of the inner side, where the swelling already spoken of was surrounded with some thickening. The patient fretted, and refused to allow an incision to be made into the left breast.

5th.—Suppuration was abundant on the right side, but there was no pain. On the left side, however, there was acute suffering; still there was no redness, but fluctuation could be felt in the thickened part. The abscess which had commenced in the gland had made its way toward the skin. Incision gave exit to well-formed pus. (A poultice.)

From this time the symptoms continued to improve, and on the 15th of February the patient returned home with the wounds in the mamma perfectly closed.

Case v.—*Abscess of the whole left mammary region; nine incisions in the space of sixteen days; abundant suppuration; complete recovery in a month.*[1]

Case vi.—*Glandular abscesses; multiple, but of moderate severity.*[2]

[1 The details have been omitted.—Ed.]
[2 Ibid.]

Case vii.—*Glandular abscess in both breasts, in a recently confined woman who had commenced to suckle.*[1]

Such is the course of the majority of milk abscesses. Constitutional treatment, which has so frequently been recommended in abscesses of the breast, must be limited almost exclusively to the parenchymatous variety.

Amongst the number of remedies that have been tried, there are very few which deserve to be retained. The ptisans of the Provence cane and of the periwinkle plant, which have been so highly spoken of, are in reality of no value at all. I have often employed purgatives, either special ones, such as the whey of Weisse, or simple medicines, repeated at short intervals for ten or twenty days, without obtaining any decidedly beneficial effect from them.

I have frequently also employed emetics, or purgative emetics, with no better success. The same remark applies to the tincture of colchicum, either that of the seeds or of the root. I have also made use, in the case of lymphatic, bloated women, of the tincture of iodine, or of iodurated baths, or of the iodide of potash, but in no case with such results as to induce me to recommend them; and finally, I have not found calomel, either in purgative or alterative doses, much more efficacious.

Large doses of tartar emetic have obtained such a reputation, on the recommendation of Rasori, that we are not justified in dispensing with it in the treatment of abscesses of the breast. Its action on inflammations in general, and of the glandular structure in particular, and on effusions into the closed or serous cavities, led to the expectation that it might exert a favorable influence on parenchymatous abscesses of the breast.

The observations published in England, by Drs. Kennedy and Beattie ('Med.-Chir. Review,' July, 1834), and in France by Lever ('Gaz. Méd. de Paris,' 1837, p. 664), seemed to me to be worthy of attention, and to justify my giving it a new trial. Accordingly I submitted a certain number of patients, whose abscesses did not yield to any other treatment, to the action of tartar emetic, and administered to them, in the course of twenty-four hours, from three to seven grains and a half of the salt, in orange-flower water, with a little syrup of poppies. By continuing this for from two to eight days, the abscesses disappeared in most of the patients.

[1 The details have been omitted.—Ed.]

On the other hand, the facts stated by MM. Beattie and Levers are destitute of detail; in their cases, the very existence of the abscess is not always shown, and, moreover, they employed both volatile liniments to the breast, and cathartic draughts internally; and there is nothing to show what kind of inflammation or abscess they were treating. So that at the present time, I believe now, as I did in 1838, that tartar emetic alone has not the value in the treatment of abscess of the breast that has been attributed to it.

However, in consequence of the intractable character of the disease, I have often employed, in association with it, either the baths of Barèges, or alkaline or simple baths, and repellant topical application, especially compression. In doses sufficient to keep up a state of nausea for a week or two, it sometimes succeeds; and were there not some fear of its effects on the digestive organs, I should not hesitate to recommend its general employment. In short, I have not found emetics in any form, either valuable enough, nor inoffensive enough to recommend them strongly, nor so entirely useless as to reject them altogether.

The existence of abscesses of the breast in nursing women, raises the serious question of suckling. When the case is one of superficial or deep-seated abscess, suckling can have no other ill effect than to increase somewhat the concomitant inflammation; and apart from the suppuration, the gland may then continue its function without there being any real danger to the child, especially if the nipple is unaffected, so that the child's mouth is not liable to be filled with pus, by coming in contact with the openings of the abscess.

There is, however, some difficulty, on this head, in the treatment of glandular abscesses of the breast. They yield less readily to topical remedies and local treatment than superficial or deep-seated abscesses; on which account, it is often absolutely necessary to attack them by indirect or constitutional measures.

How then can we cure them without drying up the secretion of milk? and how attain this end except by general treatment? With iodine internally, calomel in small doses, repeated purgatives, and tartar emetic in the way recommended by Rasori, the functions of the breast become less active, and even cease altogether, the secretion of milk and pus diminishes, and the abscesses end by discharging and cicatrizing; but it is impossible, unfortu-

nately, to interfere in this way with one breast without at the same time affecting the other; and many women will not consent to deprive their child of the breast whilst they are in a condition to give it that which is unaffected. The position, therefore, becomes embarrassing.

To pursue the most useful course, we may best get over the difficulty thus:

Wean the child, or give it to another nurse, and actively attack the disease by general and local measures; or, continue the suckling with the unaffected breast, and in that case, employ only local measures. All constitutional treatment affects the secretion on the sound side, as much as on the diseased one; and we must not expect to see the abscesses disappear rapidly, nor be surprised if they continue whole months after an opening has been made into them. A great number linger on in this way for two or three months, or even more, whatever we may do.

I have often shortened their duration, however, by means of iodine injections, thrown once a week, to the base of all the fistulæ, as was done in the three following cases:

Case viii.—*Left breast; woman recently confined, who had nursed for some days with one breast only; incisions; poultices; long-continued suppuration; injection of the tincture of iodine; cure.*—As the sequela of abscess, a sinus had resulted in this patient, from which there was a continuous discharge; and on November 24th, 1836, with the view of curing it, a solution of two drachms of tincture of iodine to one ounce of water, was injected, in two separate quantities.

On the 25th, this was repeated, as the suppuration seemed to be rather less abundant than on the preceding days.

28th.—There was a new fluctuating point at the lower part of the breast. Incision gave exit to a small quantity of pus.

29th.—The old opening had nearly closed.

December 4th.—Some drops of serum escaped from the last incision; the two other openings had closed, and there remained only slight glandular enlargement, which soon disappeared under the employment of poultices.

Case ix.—*Glandular abscess which became subcutaneous in a woman who was nursing, and had recently been confined; incision; poultices; iodine injection; cure in twenty-three days.*—In this case, on the 15th of May, 1832, pure tincture of iodine

was injected into the sinus, which had resulted from an abscess.

On the 18th, the hardness of the breast was less considerable.

On the 23d, the right breast, which was the diseased one, had become reduced to the same size as the corresponding one. Cicatrization was complete; and there was no more suppuration. Still a little induration remaining; but the patient left the hospital by her own desire.

Case x.—*Glandular abscess; injection of iodine; cure.*—On the 9th of May, 1852, the tincture of iodine was thrown into a fistulous passage leading to an abscess in the left breast of a woman, which had continued to discharge for some time.

On the 10th, that portion of the gland which was situated to the left of the fistulous opening, was somewhat inflamed; but the patient experienced very little pain. (Poultices.)

15th.—The inflammation had disappeared; but a little serum continued to flow away.

20th.—The fistulous discharge was a colourless liquid, destitute of smell, and without any very well-marked characters.

22d.—The patient was cured, and wished to go home.

Caustics are sometimes required in these cases, as in the following instance:

Case xi. — *Multiple abscesses in the left breast; forty-five openings; compression; Vienna paste; sulphur baths; iodide of lead ointment; cure.*—Dambout, æt. 32, of good constitution, had been confined of her third child for twenty-eight months, during eighteen of which, having no affection of the breast, she had continued to nurse. At that period, an abscess formed at the outer part of the left breast, and she weaned the child a fortnight afterwards. Since then, nearly fifty abscesses have successively appeared at all parts of the mamma. All of them burst, excepting the first, which was opened by the lancet.

Present condition.—Looks well, and has good general health. Left breast swollen, lumpy, hard, and riddled with about forty openings, which discharge creamy pus. The breast is pendulous, and there are two painful lumps in the axilla. The fold which separates the breast from the walls of the chest is ulcerated; there is hardness, abundant suppuration, and a fluctuating lump on the inner side. Below, the skin is red, and, as if separated

into layers. The breast looks like a large sponge impregnated with pus, or like the nozzle of a watering-pot. A compressive bandage applied.

July 29th, 1847.—No material amendment; fistulous openings; two fluctuating wellings on the inner side; and a third, of less size, on the outer side. To these three points, caustic potash was applied.

August 7th.—The eschars have partly separated; no diminution in the swelling; the lower part of the mamma is ulcerated, and gives exit to pus, mixed with a whitish fluid resembling milk.

15th.—Vienna paste was applied to the outer and upper part of the breast.

22d.—For nine days, a compressive bandage has been applied and readjusted every day. Baths of Barèges,[1] Seltzer water occasionally, and quinine wine.

September 1st.—Friction with iodide of lead ointment.

November 12th.—The breast is no longer swollen; and on examination in every direction, it is found to be soft, and to possess the natural firmness of the organ; but on the outside, there is still an indurated lump. The wounds which were at the base are covered with a delicate red cicatrix; but on the outside, there is a spot of superficial ulceration which discharges a very small quantity of pus.

December 23d.—All the wounds are closed, and the breast is covered by a large cicatrix.

§ 4. COLD OR CHRONIC ABSCESS.—The abscesses hitherto mentioned belong to the category of acute or hot abscesses, and are, in fact, nothing but phlegmonous abscesses, modified by the anatomical characters of the part. There are also abscesses of the breast which follow the course, and present the characters of cold, or symptomatic suppurations, and which consequently deserve the name of chronic abscesses. A. Cooper, who speaks of them, says that they ought to be opened after they have been treated with ammoniaco-mercurial plasters, or with a solution of sal ammonium in rectified spirit; and that, subsequently, we ought to have recourse to tonics, strengthening medicines, and stimulating injections. The author adds, that the concomitant enlargement of the axillary glands generally disappears along with them,

[1 An alkaline sulphur bath.—ED.]

and should not prevent us from treating them as ordinary abscesses. This, however, is insufficient. In the mammary region, we meet with cold abscesses, properly so called, with abscesses symptomatic of some affection of the rib or neighbouring lymphatic glands; and even with abscesses originating in the interior of the liver. They arise either in the structure of the breast itself, or in the subcutaneous tissue, or beneath the breast, in exactly the same manner as acute abscesses.

I have met with an infinity of them, occurring in some instances at the circumference of the breast, in others, at the side of the submammary groove, or, at the side of the sternum or clavicle, and occasionally also in more remote parts.

After all, it must be admitted, that the mammary region like many other parts of the body, and more frequently than some, may be the seat of purulent formations of every known variety; of tuberculous abscesses, of purely chronic and idiopathic abscesses, of abscesses arising from fistulous passages connected with disease of the ribs, clavicle, scapula, or the scapulo-humeral articulation, and also of abscesses making their way from the mediastinum or lung, or from the sternum.

Idiopathic Cold Abscesses. — Are of very various kinds. Some result from the softening of old tumours, and others contain milk, which I have seen accumulated in enormous quantity. The following are examples of each variety.

Case 1.—*Chronic abscess following a tumour of four years' duration; deep fluctuation; sensation as if of degenerated tissue; two incisions; escape of ill-formed pus; fresh abscess; escape of fluid resembling the former; cure.*—Laplace, æt. 69, a sempstress, of tolerably good constitution, has had ten children, and five miscarriages; but never had any affection of the breast from her numerous confinements. About ten years ago, she states that she discovered a small painless tumour in it, which rolled under the finger, and changed its place with facility—its bulk, which was small, occupied a very small part of the right mammary gland, beneath, and on the outside of the nipple. It remained stationary for three or four years. For about a year, it has been increasing in size, without becoming painful, and three weeks ago an abscess formed in it. Immediately after, some ulcers which for some time past had

affected the calves of both legs, healed up, as if by enchantment.

At the present time, the right breast is swollen and red, and the skin tight and lumpy. Pressure on the tumour perpendicularly, does not present the stony, hard resistance usual in scirrhus, but rather fluctuation, which seems to be deep seated, and diffused.

January 21st.—The abscess was opened in two places. The first incision was made below, from the outer to the inner side, and from the right to the left, the second almost perpendicular, from the left to the right, and there flowed away a reddish liquid, abundant in quantity, sanious, and semi-purulent, mixed with pale and decomposed flocculi. The walls of the cyst are thick and lardaceous. (A poultice.)

February 3d.—The condition of the patient is satisfactory, except, that a new abscess which had formed on the inner side was freely opened, and gave exit to a fluid exactly analogous to the other. Simple dressing. Lint in the wound, and a poultice. The cyst emptied itself from day to day, and the same treatment was continued until the 28th of February.

March 1st. — From this date Onguent de la mère[1] was applied to the wounds, which were healing.

On the 11th, the patient went out cured.

Case II.—*Milk abscess of the breast, indolent for three months; puncture with a trocar; evacuation of a quarter of a wine-glass of milk; injections of decoction of marsh mallow; poultices; cure a fortnight after entering the hospital.*—Gay, æt. 18, sempstress, in good health, though of delicate constitution, has been married eighteen months, and confined six. The labour was not severe, and the child is well. Menstruation regular. The breasts of moderate size, and rather flabby. She nursed for the first three months after her confinement, and a fortnight before weaning noticed a lump with slight redness in the right breast, but without noticeable pain, except slight shooting, which soon ceased under the employment of poultices.

July 23d, 1847.—Her aspect is good; she is well nourished; has no cough, or pain in the chest, and has never received any blow on the breast.

The tumour is *irregular* and *fluctuating;* and the fluctuation is superficial in some parts, and deep-seated in others.

[1 See note, at p. 23, for composition of Onguent de la mère.—Ed.]

26th.—A puncture was made with a small troear, and there issued out pus mixed with milk, to the amount of a quarter of a wine-glass.

31st.—An opening was made with a knife, and the wound dressed for some days with tents and poultiees.

August 2d.—The tents were discontinued; injeetions of marsh mallow, and poultices.

5th.—The patient is well, and will leave on the 8th, there still remaining a small, hardish lump.

Case III.—*Right breast; tumour the size of an adult head, giving the sensation of deep fluctuation; three incisions at intervals of some days; gastric disturbance.*[1]

Case IV.—*Indurated tumour of the left breast; consecutive abscess occurring in a person recently confined, who had suckled with that breast especially.*[2]

Case V.—*Cold abscess above the left mamma; opened by incision.*[3]

The greater number of abscesses of this kind that I have met with, were situated behind the mamma, and were ushered in by some of the symptoms of ordinary inflammation; some, however, were not preceded by the slightest pain, and in others, the pain soon ceased, whilst the organ continued to increase gradually in size, from which period the patients usually improved in health, in consequence of their ceasing to feel anxiety about the state of the breast.

If the quantity of pus be inconsiderable, matters may remain in this condition for weeks or months; and I have seen women continue thus for twenty, forty, or sixty days, and even more, believing themselves to be affected simply with lactiferous engorgement. Sometimes, also, as in the following cases, a chronic abscess results as the consequence of a glandular acute abscess.

Case VI.—*Axillary abscess, consequent on erysipelas, produced by a blister on the arm; incision; free suppuration; abscess of the left breast, incision; poultices; cure in five weeks.*—Granet, æt. 19, a sempstress, of bad constitution, chlorotic aspect, and phthisical appearance, has been delicate from infancy; but never spat up any blood. For some time past, she has had a blister on the left arm which discharges pus, and has brought on erysipelas

[1] The details have been omitted.—Ed.]
[2] Ibid.] [3] Ibid.]

and enlargement of the axillary glands, for which the patient entered the hospital, on the 17th May, 1816.

18th.—The axilla is hot and painful, and presents a red, soft, fluctuating spot, which is an abscess making its way in front between the two pectoral muscles. Incision gave exit to about a glass of sanguineous pus.

20th.—Very abundant suppuration; patient very weak, with extreme paleness, sunken eyes, and small pulse.

22d.—Same condition; pain rather severe at the upper part of the arm; diarrhœa.

24th.—Some delirium during the night.

26th.—Pain in the left breast, with a red, hot swelling at the upper and internal part.

27th.—The tumour to-day shows slight fluctuation in its centre; and incision gave exit to a large quantity of ill-formed purulent fluid.

June 1st.—The patient is better; the pain in the arm has much diminished, and so has the suppuration; but, as regards the breast, matters remain as before.

5th.—The lump on the arm has disappeared, and there remains only an aperture which discharges a very little.

The patient rapidly improved, and on the 20th, left the hospital.

Chronic abscesses, which assume the form of cysts, are met with not only under the breast and in the substance of the gland, but also all around it. At the circumference of the breast it is hardly possible to mistake them for tumours of malignant or cancerous nature; but, beneath, or in the substance of the gland, the error is not always easy to avoid. Such a mistake was committed a few years ago in one of the great hospitals of Paris, by one of the most eminent and experienced practitioners. A. Cooper cites a similar case, and I could point to others which occurred outside the hospital. I have preserved notes of one that happened nearly thirty years since, the details of which are interesting.

Case vii.—Collier, æt. 52, a sempstress, in good health, received a blow on the right breast, in February, 1823. At the expiration of six months she noticed a lump in it the size of a nut. Leeches, applied on two occasions, seemed to increase the size of the tumour; and mercurial friction, persevered in for several months, was attended with no better success.

When admitted into the hospital of the Faculty, on the 8th of April, 1824, the breast was as large as a full-sized fœtal head. The surface of it was slightly irregular, though the skin did not seem to be affected. It was globular or slightly pyramidal. There had never been acute pain, and several of the lumps composing its mass, by yielding under the finger, gave the idea of an encephaloid tumour.

On the 10th, the tumour was removed. Two curved incisions were carried from the axilla towards the sternum, so as to include a sufficiently large ellipse of integuments. More than half of the tumour was then dissected out, when the surgeon, seizing it by the fingers, so as to draw it towards himself, accidentally made a tear into the base. Immediately a pint of thick purulent matter, of a grey or reddish colour, made its escape. It contained a great number of lumps of grumous material, which might at first sight have been taken for encephaloid, but which were in reality only inspissated pus, cheesy matter of various degrees and consistence, and of different colours.

This occurrence rendered the operation very painful both to the patient and to the surgeon; for, regarding it still as a degeneration, it was considered desirable to remove all the tissues which had a doubtful aspect; and as it was difficult to distinguish the line of demarcation which separated the morbid from the healthy parts, and as the collection had made its way towards the axilla, it was necessary to dissect high up, in doing which a number of pretty large vessels were wounded. The lips of the wound were then brought together; traumatic fever and pain remained acute for three days; suppuration became abundant about the 14th, and did not diminish until the 22d. A counter opening became necessary below and outside the wound, in consequence of the accumulation of pus, and a few days after, a second one also. The patient did not recover until the middle of July, after being tormented for some time with swelling of the arm, which did not disappear until the month of August. I have not lost sight of her, and she has remained perfectly well ever since.

The following are other examples of simple chronic abscesses of the breast; one occurred in a pregnant woman, the other was independent of pregnancy or lactation:

Case VIII.—A nurse, æt. 30, came to the hospital of La Charité

with the right breast double the size of the other. She had suffered little pain, was in good health, had no fever, and knew not to what to attribute the swelling of her breast, which had continued for six weeks. It turned out, however, to be an enormous abscess situated behind the mamma. An incision evacuated more than two wine-glasses of clear healthy pus.

Case ix.—Another patient, æt. 26, of lymphatic appearance, had suffered from symptoms of inflammation of the left breast from the second month of her pregnancy. The pain and constitutional symptoms were slight, and the patient, who had to work for her daily bread, had paid but little attention to them. By the ninth month of gestation the mamma had become three times as large as is natural. The absence of redness, thickening, and pain did not prevent a correct diagnosis from being arrived at, for fluctuation was evident. The abscess contained nearly a pint of pus, and had originated in the gland.

In the following case the diagnosis was not so easy.

Case x.—A female advanced in life had a tumour in the right breast which was larger than the fist in size, had grown insensibly without evident cause, and so much resembled encephaloid disease that for a long time I was in great doubts as to its nature. It was lumpy, reddish violet in colour, in some places arborescent, the seat of deep-seated shooting pain, and to the finger suggested the idea of a fungous mass much more than of fluctuation. Nevertheless, as one of the lumps evidently contained fluid, I determined to puncture it before removing the breast. The contained fluid was thin, and serous rather than milky or creamy; grumous masses of greyish colour, and pieces of fibrine and albumen were discharged in large quantity from the depot, the walls of which were very thick. However, even now the nature of the case was so uncertain, that I still continued to fear that it was an encephaloid cyst, though I did not by any means abandon the hope that it might be a chronic abscess. After some days of hesitation, I thought it best to lay open the cyst by two large incisions, and to dress it from the bottom. Poultices and simple dressing, continued for three weeks, soon altered the condition of things, and in six weeks the patient had quite recovered.

Such a termination can, I should think, leave no doubt in the mind of any one. Surgeons will agree with me that a tumour, which only required to be opened and emptied like an abscess for

it to get well, could not have been a cancer; and besides, the patient had no return of the disease, and her health continued good.

I have met with these depots in persons who, in other respects, were in good health, robust, and of good constitution, neither scrofulous, nor consumptive. In such cases the disease has progressed as a local affection, and has completely disappeared under purely surgical treatment. The prognosis is consequently not very serious.

The appropriate treatment hardly differs from that of acute abscess. Only as the cases here spoken of are, so to speak, encysted, having in their interior a sort of soft mucous membrane, they ought, perhaps, to be emptied with the precautions necessary in cases of cold or symptomatic abscesses. If, therefore, the depot be large, and its walls very thin, it is desirable to make successive punctures rather than large incisions; but if, on the contrary, it be of moderate size, large tents, inserted so as to prevent any stagnation of the fluid, constitutes the preferable measure. Large incisions must be had recourse to if the abscess becomes acute after a first puncture, or if it be too long in disappearing altogether, when once reduced to a moderate size. I also find it desirable to treat most of these abscesses by injection of pure tincture of iodine, after having opened them, in the most dependent situation.

I shall not do surgeons the injustice of supposing that any of them could knowingly recommend the extirpation of such tumours. Dissection, so as to remove the cyst, is altogether unnecessary, for we should then substitute a laborious, tedious, and delicate operation, for a simple puncture into the abscess, without increasing the chances of cure, but, on the contrary, exposing the patient to a less rapid and less certain cicatrization. It may possibly be advisable to throw detersive injections into the abscess, and to keep a tent in the interior of each wound; and if the whole extent of the abscess has been divided, the cavity should be filled each day with dossils of lint, and in both cases poultices should be applied night and morning.

Chronic *symptomatic* abscesses are also of very different kinds.

Tuberculous Abscesses.—Though possible here, as in every other situation, tuberculous abscesses of the breast are, notwithstanding, rare. Their seat by preference is in the glandular system, and up to this time anatomy has discovered no lymphatic glands in the breast. Surgeons, who have supposed the existence of glands in the breast

on account of certain tumours in them, have probably been imposed upon by growths of the secretory structure and by morbid productions. The breast is, however, sometimes the seat of abscesses which may be called tuberculous, because of their progress, and especially of the character of the pus which they contain.

Lymphatic women, of broken constitution, who have been weak for a long period, are particularly subject to this form of abscess, which we also meet with in some persons in other respects of good constitution and health.

Case xi.—A woman, upwards of 40 years old, from Provence, who had previously enjoyed excellent health, came into La Charité for a tumour the size of the fist, which had arisen insensibly in the right breast, in consequence of a slight blow from the elbow. It occupied the inner and upper part of the breast, and had never been accompanied with pain or inflammatory symptoms.

Irregular in outline, like a glandular tumour, it was soft and fluctuating in some parts, and so hard in others that it had been mistaken for a fibrous, encephaloid, or scirrhous mass. The opening which I made in it gave exit to pus partly serous, partly grumous, resembling, in all particulars, the pus of scrofulous or tuberculous abscesses. The walls of the cyst were partly formed by the mammary tissue, and had not undergone any morbid change. Attentive examination made it evident that the purulent cavity extended, by a slightly sinuous passage, as far as the cavity of the anterior mediastinum. No change could be detected in the bones or cartilages, nor in the lung; and as the abscess finally got well, I was enabled to conclude that it was unaccompanied by any organic lesion.

I met with a nearly similar abscess in a young, pale, lymphatic girl, æt. 19 years, who was otherwise in tolerable health. This abscess, which was also situated on the inner side of the right mamma, extended, by means of a moderate-sized passage, as far as the corresponding pleura, and was so far remarkable that the pus in it was very offensive. After continuing some time, the suppuration diminished by degrees, and finally dried up in the space of five weeks; nor did we find in this patient, any more than in the other woman, indications of pulmonary tuberculosis.

It is not impossible, however, that in both cases softened tubercles, either of the lungs or of the sub-sternal glands, may

have been the commencement of the disease; but this supposition is inadmissible in the case of a third patient, whose abscess had the same anatomical character, and in whom it was situated in the parenchyma of the gland, and had no communication with the neighbouring parts. A patient, evidently suffering from pulmonary phthisis, had the breast riddled by tubercular abscesses. The disease had existed for a long time in the shape of indolent adenitis, or of mammary hypertrophy, in numerous lumps.

Case xii.—*Mammary hypertrophy of the right breast; tubercular abscess; pulmonary consumption.*—Morin, æt. 24, a thin and delicate person, had laboured for six months under symptoms of disease of the chest, with pain in the side, and much cough. A blister to the left shoulder, cod-liver oil, and anodyne pills constituted the treatment pursued, during the continuance of which she began to experience acute pain in the breast, the tumour in which commenced to increase in size.

About the same period menstruation became irregular, and the symptoms of consumption grew more evident each day. For a year past she has suffered from abscess in the throat, and being very subject to quinsy, she was attacked with chronic laryngitis, and permanent hoarseness.

For about four months the patient had perceived little lumps in the right breast, which at first were as large as peas, but which, when joined together, reached the size of an apple.

Elastic, and moderately sensitive to pressure, they are occasionally the seat of lancinating pain, but the skin is not adherent, and the tumour is movable on the surface of the chest. There is no enlargement of the axillary glands, but for about a month past the nipple has been depressed like the umbilicus, and all the lobules of the gland partake of this enlargement, and are isolated from each other.

The patient, after being subjected to a variety of general and local treatment, left the hospital uncured.

Shortly after this, an abscess formed at the outer part of the breast, which was opened by a practitioner, and has never since ceased to discharge pus. She re-entered the hospital for the purpose of having the fistula cured.

The breast, with the exception of a circumstance to be presently mentioned, was precisely in the same condition as when she first left the hospital.

Above and on the outer side of the breast, mixed up together with the proper tissue of the gland, can be felt ill-defined masses which neither adhere to the skin nor to the subjacent structures, and are subject to deep-seated pain. The axillary glands and the neighbouring parts are unaffected, and the nipple does not discharge any sort of fluid.

15th.—Towards the upper part of the nipple there is a fluctuating spot where the skin is rather red, and from which a large quantity of well-formed pus issued on puncture. The lungs were much diseased, and the patient had the expectoration, and all the symptoms, of confirmed phthisis.

30th.—Pain having been felt, for the past week, on the right of the nipple, fluctuation was discovered to-day, and incision gave exit to pus. She has no appetite, and suffers from hectic fever every night.

October 19th.—The patient left the hospital for the sake of purer air, having still in the breast two fistulous passages which discharged serum rather abundantly. She returned several times to receive advice at the hospital, when new tuberculous masses were found to have suppurated, and there was every indication that she could not survive much longer.

Abscess with Caries.—Very frequently cold abscesses of the breast are connected with disease of the ribs.

Case xiii.—*Chronic abscess; incision; poultices; compression; caries of the ribs; death.*—Rivailler, æt. 48, a workwoman, of lymphatic constitution, who has always enjoyed good health, and was young looking for her age. She had given birth to seven children, the first three of whom she has nursed.

At thirty-eight years of age she was confined for the last time, experiencing a tedious labour and uterine hemorrhage. She never regained her strength, and nine months ago, without any blow, fall, or known cause to account for it, she was seized above and on the inner side of the nipple with a dull pain, which was subject to occasional exacerbation. Three weeks afterwards the part became red and tense, and so remained for several months.

On the 8th of March, 1847, she entered the hospital under the care of M. Cruveilhier.

On the 15th, an abscess was opened, from which serous,

floeculent pus eseaped. She was transferred to my wards. For six days past, below and on the outside of the breast, there have been pereeived some irregular lumps eovered by thiekened red integuments. A bandage was applied, so as to suspend the breast, and eompress the most dependent parts. A poultiee was also ordered. The slow progress of the disease, and its situation at the union of the eostal eartilages with the sternum, led to the eonelusion that the abseess depended on disease of the ribs.

The bandage gave no relief, the external parts of the breast remained as hard as ever, and a little ill-formed pus eseaped on ineision. Towards the end of April, the patient by degrees lost her appetite, strength and eourage. In May she got worse and worse.

The wrists and other parts of the arms, and the inferior extremities, beeame dropsieal, and respiration difficult, although there was no eough. Aeute pain was felt in the breast.

On the 14th of May she died.

Post mortem, May 16th.—The eollcetion oeeupied the spaee bounded by the sternum and the inner third of the axilla, behind by the peetoralis major, and externally by the serratus magnus.

In the neighbourhood of the subseapular fossa the tissues were hard and thickened, the eartilages of the third and fourth ribs deprived of their perichondrium, and the anterior extremities of the third, fourth, and fifth ribs, black, spongy, softened and earious. There was no perforation of the pleura or mediastinum. The right lung was healthy, but the left exhibited a large tubereulous mass, whieh was not softened. The heart, kidneys, liver, uterus, and other organs, were sound.

Case xiv.—*Purulent cyst beneath the left breast, proceeding from the cartilages of the tenth rib, of ten years' duration; tumour the size of the fist, globular, subcutaneous, fluctuating, without change in the colour of the skin.*—Chevalier, æt. 53, a daily workwoman, of good constitution, who had never had any affeetion of the ehest, but had several times suffered from fever; the last attaek having oeeurred eleven months ago.

Ten years sinee, after a eold and stiteh in the side, a small indolent tumour formed beneath the left breast, and so remained for eight years, when it eommeneed to inerease in size. Leeehes were twiee applied to it, and subsequently poultiees.

The disease continuing, and the pain increasing in severity, the patient came to the hospital.

June 12th, 1848.—At the lower and external part of the left hypochondrium, below the tenth cartilage, there is a round, moveable tumour as large as a fist, without change in the colour of the skin, or subcutaneous thickening. This tumour fluctuates. Above and to the outside, the swelling is attached by a cord the size of the finger, hard and fibrous, which connects it with the top of the cartilage. It is like a pear fixed by a long subcutaneous stalk. The opening made into the abscess permitted the finger to be passed in, and afterwards the probe, as far as the cartilage, which was denuded and necrosed.

It is important not to mistake the character of these abscesses. If they depend on some substernal disease, the prognosis is necessarily serious; for though they are sometimes cured rapidly enough, we must recollect that they may, in other cases, remain for a long period, and prove the cause of serious mischief in the chest, or become fistulous, like abscesses from disease of bone. As regards their treatment, they imperatively require extensive incisions should they be of moderate size; but, on the contrary, simple punctures if they be large. If the skin covering them be thinned, and much altered in character, an opening by caustic is often preferable. I need not add, that the constitutional state of the patient should be carefully taken into account, and should serve as the basis of the final prognosis.

It is unnecessary to dwell at length on those abscesses of the breast which may depend on disease of the ribs, or their cartilages, or on affections of more distant bones. As regards diagnosis, such abscesses present no characters but such as may accompany them everywhere else, although it is true, and some cases to be related hereafter will prove it, that they often suggest the idea of tumours of a totally different kind.

Abscesses which communicate with a tuberculous cavity in the lung require separate notice. In both women and men, in the adult as well as in the child, they have characters which are altogether peculiar to them. They may show themselves abruptly as acute abscesses, but usually they are developed so gradually that they may be classed with chronic abscesses.

We hardly ever see them, and indeed they can scarcely exist in the mammary region, except behind or around the gland. When the

tissues covering them inflame, it is in an undecided, vague, irregular way; the tumour generally remains soft, and spreads incompletely; the redness of the integuments is of a yellowish or violet tint, something like erysipelas, and they are almost invariably the seat of a crepitation or bubbling, which is pathognomonic of their character.

The mode of their formation can be easily explained. The lung, overrun with masses of tubercle, contracts adhesions with the pleura-costalis; a cavity formed there proceeds by ulceration towards the breast, and the disease, traversing the intercostal space, soon induces inflammation of a bad type beneath the breast, when, indeed, the suppuration does not accumulate there in the first instance. On the other side, as it communicates with the bronchi, it is plain enough that the abscess sends air as well as pus to the exterior, whence the crepitation and bubbling.

I have very often met with such abscesses—in the first instance in 1829, in the wards of M. Rayer, at the Hospital Saint Antoine, and subsequently in a child of eleven, in the Clinique of M. Vasseur. Later on, they occurred in ten patients under my care, in 1831 and 1833, at La Pitiè; and finally, in three women who were confined during the progress of advanced phthisis. I had encountered them so often, and their existence always seemed to me so simple and natural, that it was not without surprise that I found my respected friend, Professor Forget, of Strasbourg, speaking of them as rare, when, in 1846, he communicated a case of the kind to the Academy of Medicine, which he considered unique.

As mere secondary symptoms of a disease, in other respects incurable, such abscesses are only of minor interest. It matters not whether we open them with caustic, or the knife, or leave them to nature, the general affection is scarcely influenced in either way.

If they remain small and indolent, it is prudent to leave them alone, and do nothing with them, or merely to favour their progress by means of slight compression. When they increase rapidly, or inflame, it is, on the contrary, of consequence to open them promptly.

When once opened, they are not long in contracting, and result in purulent fistulæ, which sometimes finally close, but in other cases remain until the death of the patient.

Fœtid or gaseous abscess.—It was remarked before that some

abscesses of the breast contain fœtid pus, or pus mixed with gas, which circumstances, in the case of tuberculous abscess, have seemed to me explained by the communication between the suppuration and the inside of the chest. The purulent depot, being in communication with the external air, through the intervention of the bronchi and substance of the lung, may evidently contain air or gas, and the formation of the fœtid pus can thus easily be understood. But I have seen fœtid abscesses, and crepitant abscesses, in the breasts of women, without any pulmonary affection or perforation of the chest.

Case xv.—A woman, æt. 30, confined three weeks, was admitted into La Charité, with one of these abscesses, in the year 1845. Of neither very good nor absolutely bad constitution, she had endeavoured to nurse for ten days. The abscess had all the characters of a submammary collection from glandular inflammation. It was about as large as the fist, and presented on the outside and below the breast. On opening it, there came out about a wine-glass of such stinking pus, that the pupils were obliged to leave the patient's bedside. It was evidently an idiopathic abscess, without any sinus or communication with the chest, and the cure was no longer in being effected than if the case had been one of any other kind of inflammatory, submammary abscess.

A still more unusual abscess, which had attained a considerable size, was met with by M. Cazeau, at the Clinical Hospital. The case, which has been published by this accoucheur, occurred in a female who had been recently confined. Not only did it contain very fœtid pus, but also a large quantity of gas, so that before being opened, it was the seat of genuine crepitation, notwithstanding which, there was neither pulmonary cavity, nor communication of any kind, between the chest and the purulent depot. I also once met with a fœtid abscess in the very substance of the nipple, and in another case in the areolar disc. In neither case did the abscess exceed the size of a hazel-nut; and the patients, who were not pregnant or suckling, in other respects enjoyed good health.

The fœtid nature of some abscesses, closed in on every side, is a phenomenon, which attracted no attention until I spoke of it for the first time in the year 1825, though all practitioners now admit its existence. The explanation which I then gave of the

fact, and which Dance has since confirmed, does not seem to require any fresh proof.

Whenever a collection takes place in the neighbourhood of hollow organs, which communicate directly or at a distance with the atmosphere, the pus is liable to become fœtid; the proximity of mucous canals, and consequently of the atmosphere, sets up in them a chemical process which modifies their nature. Whether it be in consequence of imbibition introducing into the collection some of the matters which are usually contained in the mucous cavities, or from the high temperature which is kept up in the part, or from its mere presence, the abscess perverts the secretions of the neighbourhood, and invariably a peculiar reaction occurs within it; for not only does the pus become fœtid, but the fœtid smell even varies according as the abscess is developed in the ear, the mouth, in the course of the larynx or trachea, or in the neighbourhood of the anus, the vagina, or urethra, or in the substance of the abdominal or thoracic parieties.

This explanation seems to me also to be applicable to the mammary abscesses now under consideration. In the case of a young girl, disease of whose anterior mediastinum proved the origin of a fœtid abscess of the breast, the fact seemed conclusive, in consequence of the contact which existed between the anterior border of the lung and the depot. In M. Cazeau's patient, also, the collection was submammary, and probably influenced by the neighbourhood of the lung, which was only separated from it by a thinned, thoracic wall.

The presence of gas is explicable in the same way; for if the neighbourhood of the lung was capable of communicating a fœtid odour to the pus, it was also capable of setting up decomposition in the collection which might produce the gas. I am not sure whether, in the case of the small abscesses of the nipple and areola, it would be reasonable to seek for the explanation in the proximity of the lactiferous tubes, distended with milk. Does not the abscess itself originate in a lactiferous swelling—in some excretory tube which has accidentally become dilated?

IV.—FISTULÆ OF THE BREAST.

Two sorts of mammary fistulæ have been described—the one resulting from long-standing suppuration—the other dependent on some change in the milk-tubes.

Purulent Fistulæ.—The term fistulæ, given to sinuses consequent on abscesses of the breast, seems to me rather ill-chosen. Such fistulæ are, in fact, merely abscesses which remain open, and are kept up by the continuance of the suppuration. The name, however, commonly assigned to them, has led some practitioners to adopt a course of treatment not founded on very rational grounds. How can we expect to close these fistulæ by obliterating their orifices, without, in the first instance, drying up what constitutes their source, that is to say, without healing up the abscess connected with them? To treat them by applications of caustic, or irritants, and by scarification of the edges of the ulcer, is, in fact, to attack the shadow, and miss the substance, and in so doing, to transgress all the rules of surgery.

As such fistulæ are merely open abscesses, which, in the first instance, are usually deep-seated, and sometimes interlobular or glandular, but rarely subcutaneous, they ought to be placed in the category of abscesses, and not of fistulæ, as is shown in the following instance:

Case 1.—*Chronic engorgement; fistulous passage, consecutive to glandular abscesses, three months before the patient came into the hospital; improvement under compression with strips of plaster.*—Ramée, a servant, æt. 23, of good constitution and sanguino-lymphatic constitution, who had always enjoyed good health, was confined three months ago of her first child. She had nursed for a week, at the expiration of which, her right breast became swollen and painful. Three weeks afterwards, the abscess burst, but the swelling did not disappear, and in six weeks another abscess formed. For several days the patient has experienced sharp pain in the left hip.

March 11th, 1843.—*Present state.*—The right breast, flabby and voluminous, and somewhat more developed than the left, exhibits a hard swelling in its central portion, without alteration or heightened sensibility of the skin. From an orifice beneath the nipple there flows a small quantity of milky serum. Above the nipple there is a little depression, with adherent skin, which is the cicatrix of an old orifice. Careful compression was kept up by means of strips of diachylon plaster.

20th.—The plaster was removed, when it was found that the swelling had almost wholly disappeared, and that the fistula had closed.

Lactiferous Fistulæ.—The preceding observations were by no means intended to deny the existence of genuine fistulæ in the breast. On the contrary, I am well aware that there are at least two varieties of them. They are all passages greater or less in length, but usually short, which have one opening in the skin, and the other in some milk-tube. The orifices of these fistulæ are, in some instances, small, but in others pretty large; and the fluid escaping from them, is milky, sero-purulent, or simply serous. They exist more particularly around the nipple, but on two occasions I have seen them situated in the nipple itself.

The exciting cause is usually lactiferous engorgement, and retention of the milk in its proper tubes; but they may also follow wounds, and incisions in the breast, which may have been required for the evacuation of an abscess.

Should some of the milk-tubes get choked up and obliterated, the milk distends the part behind the obstruction, and forms a cyst, which when once opened may remain fistulous. When, during lactation, one of the large milk-tubes happens to get ruptured from the continual passage of the milk, it may become transformed into a fistula, and a similar event may attend on abscess where the collection communicates with one or more of the excretory tubes of the gland.

Case II.—*Parenchymatous abscess of the left breast, lactiferous fistula; purgatives; blisters; compression; cure.*[1]

Case III.—*Eight fistulous openings, consequent on abscesses in the left breast, which appeared to be undermined in nearly its whole extent. The patient leaves the hospital at her own request, without being cured.*[2]

Fistulous openings in the breast are subject to as great variety in respect of situation and form, as those of the salivary apparatus, and they partake to some extent of the same difficulty in cure. Still there are certain marked differences between mammary and salivary fistulæ. The glands which secrete the saliva, are in a state of activity every day, from birth until death, whilst the functions of the mammæ are transitory and intermittent, being in operation only during a short period of life. The salivary secretion is extremely thin and fluid, whilst the secretion of the breast, on the contrary, is of imperfect fluidity. Some of

[1 The details have been omitted.—Ed.] [2 Ibid.]

the salivary ducts also, are long and capacious, and altogether isolated from the lobules of the glands, whilst the milk-tubes, being mixed up, until just upon their termination with the secreting tissue, are always either tortuous, irregular, or of different dimensions, in various parts of their course. These differences account for the fact, that the mamma is less frequently affected with fistulæ than the apparatus of the parotid, so that all things being equal, the prognosis is less serious in the breast than in the salivary glands. However, occasionally, mammary fistulæ do resist treatment to the most hopeless extent, especially when they persist without being kept up by the stimulus of lactation.

Treatment.—The treatment of lactiferous fistulæ is sometimes very difficult. During the time necessary to complete the suckling which may have been commenced, the fistula may disappear of itself; but if we are not content to temporise with them, we must not expect local treatment to succeed, unless, at the same time, we check the secretion of milk by constitutional measures. We must not lose sight of what was said before, on the subject of suckling, in women who are affected with glandular abscess. The same treatment, both local and general, is called for here, as in the case of abscesses, when the patient will not submit to wait for the effect of time. Long-continued compression is a measure which often succeeds in lactiferous fistulæ, and may always be resorted to. We may also have recourse to cauterization with nitrate of silver, or to little pluggets of red lead, whether the patient continue to suckle on the affected side or not; or we may employ compresses wet with styptic solutions, or astringent powders, as alum, or especially sulphate of iron, employed concurrently with cauterization, which should be repeated four or five times at intervals of some days.

Compression increases the efficacy of cauterization; but as it interferes with the nurse's giving the breast to the child, it is only applicable in the case of women who have ceased to suckle with the affected mamma.

Previously, or subsequently to cauterization, we may try stimulating injections, by means of a syringe, with a stronger or weaker solution of nitrate of silver, of sulphate of zinc or copper, of alum, tincture of iodine, or of a spirituous decoction of red roses. It is of importance, that the medicated fluid should be introduced, so as to come in contact with all the diseased parts. Pure tincture of iodine employed in this manner, once a week, is

one of the best means that I am acquainted with. When the artificial inflammation has arrived at the desired stage, we should discontinue the treatment for a time, and then resume it some days afterwards, with the assistance of compression.

It is still more necessary that these injections should be discarded than even compression, in the case of women who continue suckling, for as they may get mixed with the milk, they undoubtedly endanger the health of the child.

In case all these applications fail, it is open to us to divide the whole extent of the fistulæ, so as to cauterize and dress them from the bottom, and allow of their healing by the second intention; but for ten years past, I have not met with one case which eventually resisted the measures pointed out above.

Fistulæ sometimes occur in women who are neither pregnant nor suckling, nor have been recently confined, nay, even in women who have never borne children, or have not had any for many years. I met with one, in the case of Madame C—, æt. 68, whose youngest child was thirty-nine years old. When unconnected with the lactiferous secretion, they occur near the root of the nipple, and appear to me to originate in a swelling or little cyst developed at the expense of some of the lactiferous tubes. A serous fluid, sometimes limpid, sometimes yellow, or of a red colour, and slightly sticky, escapes from them.

Like lactiferous fistulæ, they do not cause any pain, except it be a "disagreeable itching," and it is, in fact, more from the accompanying discharge, which continually wets the clothes, than from any pain, that they inconvenience the patients. The skin of the neighbourhood however, being thus wetted by the discharge from the fistula is more liable to excoriate, and to be attacked with erysipelas, or erythema, than in the natural condition. They are still more difficult to cure than lactiferous fistulæ. Having no connection with the secretion, as in the cases of those who suckle, they are exempt from modifications, and from the influence which spontaneous or artificial suppression of lactation has upon the former; and being kept up by a change or alteration, in some degree mechanical, in the tubes which are no longer filled by secretion, they are unaffected by general measures. Consequently they must be attacked by local applications alone; and injections and cauterization may be employed without danger from the very commencement. As there is no concomitant engorgement of the neighbouring parts, and no sinuses or thin walls,

and as they generally occupy some irregular angle, or little groove at the circumference of the nipple, they are difficult to cure by compression. In the case of the lady mentioned not long ago, everything having failed, I finally included the fistula in a fold of integument with a sort of compressive clasp, which effected its obliteration. As every case that I have met with has eventually got well, I am inclined to think, that none of them are absolutely incurable. I once saw one which got well of itself after all kinds of treatment had been employed in vain. More obstinate than one would suppose them to be at first sight, lactiferous or purely serous fistulæ of the breast, are still not such serious affections as they have been represented to be in the public writings of various surgeons for some years past.

Perhaps they may sometimes have been confounded with the reddish discharge which escapes from the nipple in some patients, labouring under tumours of innocent or malignant nature.

V.—BLISTERS AND COMPRESSION.

§ 1. BLISTERS.—Two therapeutic agents spoken of in connection with phlegmon and abscess, namely, *blistering* and *compression*, require some further notice.

Blisters.—According to the opinion of all surgeons, blisters applied to tumefactions and chronic engorgements are resolvent agents of great value. But in the case of acute inflammation or abscess of the breast, few practitioners have ventured to apply them. Nevertheless, in this situation, as elsewhere, they constitute a powerful class of remedies, and are amongst the most valuable resolvents at our disposal.

Having, since the year 1830, frequently employed large-sized blisters in the treatment of a great number of acute diseases, I was soon induced to use them in certain cases of inflammation of the mamma ; and I now proceed to state with what results.

Inflammation. — There are so many ways of treating acute inflammation of the breast, that no one would think of attacking it, in the first instance, by large blisters, not because we might not often arrest the progress of the disease, and cut it short in this way, but because blisters are rather sharp remedies, which patients are unwilling to submit to.

I do not in any case recommend them for lactiferous en-

gorgement or parenchymatous inflammation, before the formation of pus.

In subcutaneous inflammation, however, they succeed pretty frequently; but they are chiefly indicated in deep-seated inflammation. In the last case, other varieties of treatment have so little effect upon the disease, that it is perfectly allowable to try this one, notwithstanding the pain it may occasion.

Abscess.—In the breast, as elsewhere, a blister has this feature, that in spite of an abscess having formed, its action is still of evident value. It may be said that it acts, when pus has not yet formed, as a powerful resolvent, and when resolution is no longer possible, as an energetic means of maturing the abscess. It delays suppuration, and hastens the resolution of the inflammation, if applied at an early stage. At a later one, it expedites the formation of the abscess by softening the tumour, and diminishing the sensibility, tension, and thickening of the parts around. In cases of open abscess, when the cure is tedious, blisters are also useful. Applied over the whole extent of the swollen surface, comprising the ulcers and the open wounds, they tend both to close the depots, to heal the fistulæ, and to resolve the concomitant engorgement.

In order to derive the full advantage from them, in these different cases, the employment of blisters should be submitted to certain rules.

Thus, in the first stage of subcutaneous inflammation, we should only have recourse to them in persons who have an extreme dread of incisions. In deep-seated inflammation we should not dream of them, except in case the inflammatory attack is both extensive and intense, and occurs in a person whom it would be imprudent to submit to free depletion. In both these varieties of inflammation, it is chiefly when the progress of the case is in some degree uncertain, that blisters are useful. They sometimes succeed, also, even when pus has already formed. In the breast, just as in an infinity of other situations, I have seen pus, the existence of which, to some amount, was evident, completely disappear under their influence, without any inconvenience to the general health of the patient. At a later period, that is to say, when the abscesses are fully formed, we should not think of covering them with blisters, except when their parietes are too long in becoming thin, and the case tends to remain stationary, and become chronic. When once opened, abscesses of the breast do not require the em-

ployment of blisters, unless they are tedious, and cleanse themselves imperfectly, or the tissues around continue lumpy and hard, as if they required a fillip to hasten the healing process.

Case 1.—*Glandular abscess in the left breast, in a person recently confined, who had commenced to nurse; large blisters; cure in nineteen days.*—Fossard, æt. 25, a cook, of good constitution, had been confined two months, during only one of which she nursed. A fortnight back her left breast became painful and inflamed towards the internal and upper portion, in consequence, no doubt, of the organ being flabby and voluminous, so that it hung down on the outer side to such an extent that the dragging upon it gave rise to the abscess. The patient had only employed poultices.

February 20th, 1847.—There is a tumour seated in the tissue of the gland, on the summit of which is a fluctuating spot, where the skin is red.

21st.—As suppuration seemed to be difficult, a large blister was applied all over the tumour. The patient complains of being feverish during the last two days only. Her appetite is maintained.

22d.—The pain of the blister has effaced that of the disease, and the cantharides has not affected the genito-urinary organs. Nevertheless, the fever had been more severe than on previous days, but this morning it had disappeared. The blister was allowed to heal.

25th.—The fluctuation has vanished, but all the inner part of the breast is hard and engorged, the primary swelling especially participating in this change. A new and larger blister was applied.

26th.—The patient complains of the effects of the blister on the genito-urinary organs. It was allowed to dry up. There is slight febrile disturbance.

29th.—The pain has disappeared, and the engorgement of the breast diminished, and there is no trace of fluctuation remaining. No more fever; the appetite, which had been lost during the last few days, has returned. The patient was ordered to have some nourishment. Mercurial inunction and six grains of calomel in three doses.

March 3d.—As the patient bore the calomel badly, some opium was added to it.

7th.—The mercurial treatment had been continued. The en-

gorged lump had diminished, but this morning there was some soreness of the mouth.

9th.—The engorgement has wholly disappeared from the primary swelling. Salivation continues. The calomel was discontinued, but friction with mercurial ointment still kept up.

Finally, by the 12th, the breast had recovered its softness, and the patient went out, notwithstanding the salivation.

I apply the blister in these cases, not to the neighbourhood of the breast, but exactly over the affected parts. It should be large enough to extend beyond the limits of the disease in its whole extent, even if it be from eight to twelve inches in size. It is also desirable, although the necessity of the precaution has of late been denied, to add a considerable quantity of camphor to it, in order to diminish the effects of the cantharides on the bladder. At the first dressing, the epidermis is to be removed, should the vesications be much developed; otherwise we may be content with evacuating the serum by simple puncture. Afterwards, the dressing should be with blotting-paper spread with cerate, or with poultices, if the pain be acute. The pain caused by a blister is, generally speaking, much less severe than one would at first imagine. Most women are quite surprised at this, and it is even not uncommon for the pain of the inflammation to disappear in great measure under the action of the blister. Should resolution be about to take place, the tumefaction diminishes ere long, and no lump remains on the surface of the breast. Should, however, the maturing influence of the blister predominate, some portions of the breast become softer, thinner, and more prominent than the rest. In the first case, the resolvent influence of the treatment should be continued; but in the second, we ought to pause and look about, in order to open and attend to the purulent formation.

When blisters are employed to the breast in cases of suppuration with fistulæ or ulcers, it is always as resolvent agents. We should consequently associate them, as soon as they have risen, either with poultices, if the deep-seated inflammation be still acute, or with mercurial and iodine ointments, if the induration and engorgement of the parts has become chronic.

I may add, also, that it is well to have recourse to this remedy more than once, when it has been useful in the first instance, as the utility of its action scarcely becomes apparent before the expiration of two or three days; and as this action may be main-

tained for several weeks together, it is desirable to renew them only every ten or twelve days. I have applied blisters in this way, four or five times successively, in cases of long standing.

§ 2. COMPRESSION.—Since the year 1823, and especially since 1826, when I published my first researches on the employment of compression in the treatment of acute inflammation, this modern agent has been extensively employed, and the mamma, in spite of its disadvantageous position, has also derived benefit from it. At the present time, I am not the only practitioner who employs it in inflammation of the breast, as I was twenty years ago. In an excellent memoir, my colleague at the Faculté, Professor Trousseau, and also Dr. Contour, demonstrate the advantages which may be derived in such cases from well-applied pressure.[1]

The result of their investigations, as well as my own, and those published by M. Raimbert,[2] is as follows:

1. That in the first stage of inflammation of the mamma, compression alleviates rather than augments the pain.

2. That it sometimes cuts short the most acute inflammation so effectually, as to get rid of it in a few days.

3. That it circumscribes and limits the size of abscesses which have not yet burst.

4. That it frequently favours the drying up of open abscesses, and the resolution of any engorgement existing around purulent collections.

5. That it often dries up and heals fistulæ and sinuses which have resisted every other mode of treatment.

6. That, in one word, it constitutes one of the best resources that we possess, in the case of simple, or, as in the preceding instances, of complicated subacute swellings, accompanying or following abscess of the breast.

Notwithstanding its unquestionable efficacy, compression can, however, scarcely be employed at all, in cases of pure and simple inflammation of the breast, nor in abscesses which are still closed. Its application is too troublesome and difficult, its success too rarely complete, for us to decide on subjecting our patient to its employment. It is more particularly when the pus has found an exit, that compression is useful. After the opening of an abscess, more than any other method, it permits of our bringing the edges

[1] 'Journal des Connaiss. Med.-Chirurg.,' February, 1841, vol. viii, p. 45.

[2] Ibid., September, 1842, p. 96.

of the abscess together, so as to promote its cicatrization, and by its assistance we sometimes succeed in completely curing the largest formation in the course of two or three days. If fistulæ and sinuous passages exist, in consequence of abscess in the breast, well-applied compression often heals them, at the same time that it empties and softens the whole of the engorged parts.

In order that compression may be successful, it is essential that it should be well applied, and this in the breast is not an easy thing to do. With its hemispherical form and lobular structure, the breast does not adapt itself easily to the application of bandages, and especially to compressive bandages. Bandaging the trunk hardly exerts any pressure save on the front and back, and cannot supply what is wanted. By means of a band we can readily exert pressure in front, and above and below, but the extremities of the transverse diameter of the breast necessarily escape, and the end is thus imperfectly accomplished. Particular bandages, the triangular bandage and the tin-plate, suggested by M. Raimbert, get shifted too easily from their position during the movements of the chest, shoulder and head. Strips of diachylon plaster, which I long ago recommended, and which M. Trousseau has also employed, constitute, therefore, one of the best methods we have of compressing the mamma. Even with adhesive bands, the compression of the breast is difficult, and if it be badly done, the patient's condition may be made worse. The shape and size of the breast vary so much, that it is impossible to lay down detailed rules for the application of such bandages. Still it may be stated, that the breast should be compressed from the circumference to the centre, or from the sides towards the middle, either from above downwards, and from below upwards, or laterally, rather than from the front to the back. In almost all cases, also, especially when there are open abscesses or fistulæ, graduated compresses should be applied at the same time to the hollowest parts, or to those places which have the greatest need to be supported.

When strips of plaster are employed, it is desirable that they should include the whole circumference of the chest, either horizontally, or crossing over one shoulder, in a spiral, diagonal, or ellipsoid manner. By this means, the fistulæ and wounds may be included in the bandage, which may be left in its place for a week, or even until the cure is completed. If, after some days, the pressure seem to become relaxed, new bandages and compresses are to be applied over the original ones, and generally answer very well.

Strips of plaster act by their adhesive quality, as well as by the compression which they exert, and have an advantage over linen bandages in being more fixed; but they have the inconveniences of readily exciting erysipelas, of causing great itching, and easily excoriating the skin on the side of the axilla, whilst they also act as unyielding bands encircling the chest.

Moreover, in the case of the breast, even more than in the extremities, compression is an agent the efficacy of which depends as much on the surgeon as on anything else. Such descriptions as can be given in words can scarcely be of any use to those who do not guess the proper method of its application, and in no way enlighten any one who rightly comprehends the object to be attained. In some women the breast is so freely detached from the thorax, that we can compress it like a limb by circular strips extending from the thorax to the nipple. With strips of plaster, compression is pretty well kept up in such cases. It is, on the contrary, difficult to prevent a linen spiral bandage from slipping, and it is consequently sometimes useful to conjoin sticking plaster with the ordinary bandage. After including the breast in vertical spiral strips, others are to be applied from before backwards, so as to cross in all directions, and then the ends are to be fixed by turns of a bandage in the front part of the chest. It is still more necesssry, as I formerly observed,[1] to compress the mamma in this way than the testicle. Strips of plaster are to be applied circularly to the root of the organ, and covered and fixed by others which are placed crosswise from above downwards, in such a way that the whole looks like a hood. We thus obtain a bandage which does not include the chest at all, and leaves the respiration entirely free. It is seldom, however, that compression effected on this principle is sufficiently firm and permanent to fulfil exactly the end we have in view.

Compression effected with special bandages, simple bands, either of linen or flannel, or with sticking plaster, as has already been observed, almost always requires pads. Charpie, tow, or cotton, rolled up under the bandage in lumps, pads, and irregular pieces so as to form graduated compresses, are preferable to other materials.

They are to be placed above or below, or on the inner side, and sometimes also on the outer side. The parts requiring their employment vary, as do their size, thickness, and shape, in each individual case, so that it is impossible to lay down detailed rules

[1] 'Dictionnaire de Médecine,' article Mamelle.

for their general application. The surgeon must make slight alterations in them for each particular patient, and even for each particular day, so as to adapt himself to the physical conditions of the mamma.

In some patients, the gland affected with abscess or fistula is so soft and extended, that it hangs down below its root in front of or at the side of the chest. Here compression must be effected in a different manner. Pieces of linen, or some other protecting material, are, in the first instance, to be placed between the mamma and the skin of the thorax. The breast is now to be grasped, drawn down and flattened against these pads, and then pressure is to be exerted by circular bands, which encircle the chest at the same time, and are applied from above downwards until they reach to the most dependent part of the organ. The part is thus comprised in a regular circular manner, from the axilla as low down as the hypochondriac region, and this bandage may have a crossed form given to it, or may assume the shape of a four-tailed bandage, which may be rendered still more solid by methodical cross pieces. When it is possible not to leave a single wound or fistula, or sinus at the root of the breast, this constitutes one of the most effectual methods of compression that we can resort to.

Case II.—*Left breast; submammary abscess of a fortnight's duration; incisions; poultices; compression; erysipelas; mercurial friction; cure in two months and a half.*[1]

We must not, however, conclude that, even by well-applied compression, we can always succeed in curing inflammation, inflammatory engorgements, or fistulous and purulent sinuses of the breast. The accompanying analysis of cases treated in this way shows what may be attained by this method, and demonstrates also that it does not always succeed, but that we are often obliged to abandon it, or at least that we should not dispense with other curative measures at the same time:

[1 The details have been omitted.—Ed.]

TABLE OF ABSCESSES

TREATED BY

COMPRESSION AND OTHER MEASURES.

TABLE

ABSCESSES TREATED

1. SUBCUTANEOUS

Date.	Age.	Occupation.	Confinement.	Seat.	Cause.
1834	21	Sempstress.	Recently confined.	Left breast	Following confinement.
1835	17	—	Recently confined; nursed 13 days.	Both breasts	,,
,,	19	Servant.	Recently confined; did not suckle.	Right breast	,,
1844	18	Shoebinder.	One child; had nursed.	Both breasts	—

2. GLANDULAR

1835	22	Wife of a gardener.	Recently confined; has nursed.	Both breasts	Following confinement.
,,	24	Sempstress.	,, ,,	,, ,,	,,
1837	20	,,	——	Left breast	Repeated milk-knots.
,,	50	Grocer's wife.	——	Right breast	A blow.
,,	29	Housemaid.	——	—	Suckling.
,,	18	Artificial-flower-maker.	Confined two months; is suckling.	Both breasts	A chill.
1839	18	Servant.	Recently confined.	Left breast	Following confinement.
,,	25	,,	,, ,,	Right breast	,,
1841	24	,,	Recently confined; has nursed.	,, ,,	,,
,,	28	,,	Three children; is nursing.	Left breast	,,
1844	19	Lace-maker.	Recently confined; has nursed.	Both breasts	,,
,,	30	Wife of a hatter.	Recently confined.	,, ,,	,,
,,	23	Sempstress.	Recently confined; is suckling.	Left breast	,,
,,	21	Servant.	Recently confined.	Both breasts	,,
1845	22	Sempstress.	Confined three weeks.	Right breast	,,
1846	20	—	Two children; is suckling.	Left breast	,,
,,	31	Servant.	One child; ,,	,, ,,	,,

I.

BY COMPRESSION.

ABSCESSES.

Treatment.	Complications.	Termination.	Duration.	Observations.
Opened spontaneously; compression.	—	Improvement.	—	
Incision; compression.	—	Cured.	99 days.	Consecutive submammary abscess; good effects of compression.
Incision; poultices; compression.	Inflammation of axillary glands.	,,	22 ,,	Consecutive engorgement; good effects of compression.
,, ,, ,,	Irregular smallpox.	,,	53 ,,	This abscess was both subcutaneous and submammary.

ABSCESS.

Incision; poultices; compression.	—	Left before being cured.	22 days.	
Incision; poultices; iodide of lead ointment; compression.	Multiple.	Nearly cured	2 months 16 days.	
Incision; compression.	—	Cured.	43 ,,	
Compression.	—	,,	18 ,,	
Incision; purgatives; compression.	—	,,	23 ,,	
Incision; compression.	Opening fistula engorgement.	Improved.	28 ,,	
Leeches; liniment. ammoniæ; incision; compression.	—	Cured.	30 ,,	
Incision; mercurial ointment; compression.	—	,,	3 months.	This abscess was both glandular and submammary.
Compression,	Pleurisy.	,,	15 days.	
Leeches; incision; poultices; compression.	,, (Bleeding).	,,	30 ,,	
Incision; poultices; compression; sal ammoniac lotion.	—	Left before being cured.	30 ,,	
Incision; compression.	—	,,	34 ,,	
,, ,,	—	Cured.	31 ,,	
Incision; poultices; compression.	—	,,	2 months 7 days.	Multiple abscesses.
,, ,, ,,	—	Left before being cured.	3 days.	Returned a day after, and remained 24 days; but went away again before being cured.
Purgatives; blisters; compression.	Lactiferous fistulæ.	Cured.	—	
Opened spontaneously; compression.	—	,,	20 days.	

Date.	Age.	Occupation.	Confinement.	Seat.	Cause.
1846	19	Sempstress.	One child; is suckling.	Both breasts	Following confinement.
1847	24	,,	,,	Left breast	—
,,	32	Labouring woman.	Three children; nursed eighteen months.	,, ,,	—
,,	55	Sempstress.	——	,, ,,	Following confinement.
,,	22	Servant.	Recently confined; had suckled.	Right breast	,,
,,	32	Sempstress.	,,	,, ,,	,,
,,	25	Servant.	,,	Left breast	,,
1842	27	,,	,,	Both breasts	,,
1837	29	Shopwoman.	,,	,, ,,	,,

3. SUBMAMMARY

1836	21	Sempstress.	Two children.	Right breast	Cracks.
1837	22	Cook.	Recently confined.	—	Following confinement.
,,	24	Wife of a hatter.	Two children; recently confined; had nursed.	Right breast	,,
,,	18	Artificial-flower-maker	Two children; recently confined; had nursed.	Both breasts	A chill.
,,	33	Labouring woman.	Two children.	Left breast	Contusions.
,,	21	Sempstress.	Recently confined; had nursed.	—	Following confinement.
1841	25		Several children; recently confined.	Both breasts	,,
,,	22	,,	Recently confined; had nursed.	Right breast	,,
1842	25	,,	,, ,,	,, ,,	Blow.
,,	23	,,	Recently confined.	,, ,,	Following confinement.
1844	24	,,	Was nursing.	,, ,,	,,
,,	25	,,	Confined three months.	Left breast	—
1845	22	Lace-maker.	Two children; had not nursed.	,, ,,	—
1847	48	Labouring woman.	Seven children; had nursed.	—	Caries of the ribs.
1848	23	Servant.	One child; had not nursed.	Right breast	—
1850	20	Pasteboard-maker.	Recently confined; had nursed.	Left breast	Following confinement.
1852	23	Servant.	,, ,,	,, ,,	,,

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; compression.	—	Cured.	23 days.	
Incision; poultices; compression.	—	,,	15 ,,	
Caustic potash; Vienna paste; compression; iodide of lead ointment; iodide of potash, internally.	—	,,	6 months.	Breast riddled with fistulous holes.
Leeches; iodide of lead ointment; incision; compression.	—	,,	2 months 20 days.	
Incision; poultices; compression.	Had become subcutaneous.	,,	10 ,,	
Opened spontaneously; incision; poultices; compression.	—	,,	3 weeks.	
Incision; poultices; compression.	Had become subcutaneous.	,,	17 days.	
Opened spontaneously; iodide of lead ointment; compression.	Formation of a new abscess.	,,	38 ,,	
Incision; compression.	,, incision.	,,	35 ,,	
ABSCESSES.				
Leeches; poultices; incision; compression.	—	,,	11 ,,	
Opened spontaneously; mercurial and iodide of lead ointments; compression.	—	Nearly cured	27 ,,	
Incision; blister; poultices; compression	—	Cured.	3 months.	
Opened spontaneously, on the left side; incision on the right; compression.	—	,,	28 days.	
Sal ammoniac lotion; compression; incision; poultices.	—	,,	38 ,,	
Compression; incision.	—	,,	7 ,,	
Compression; poultices; incision.	—	Nearly cured	19 ,,	
Opened spontaneously; incision; compression.	Abscess of left breast; incision.	Cured.	2 months.	This abscess was deep-seated and subcutaneous, presenting the shirt-stud appearance.
Incision; poultices; compression.	—	Nearly cured	30 days.	
Opened spontaneously; poultices; compression.	—	,,	46 ,,	Multiple.
Incision; poultices; compression.	—	Cured.	51 ,,	
,, ,, ,,	Eruption on skin.	,,	47 ,,	
Opened spontaneously; compression.	—	,,	22 ,,	
Incision; poultices; compression.	—	Died of caries.	35 ,,	
Opened spontaneously; white precipitate ointment; compression.	Two new abscesses; incision, eczema.	Cured.	13 ,,	
Incision; poultices; compression.	Erysipelas.	,,	5 weeks.	
Blister; iodide of lead ointment; compression.	—	,,	,,	

STATISTICAL

The Results of nearly 200 *Cases collected in the Hospital, under my Inflammation and Abscess. The Tables would have contained Abscess, of Chronic Abscess, and of Symptomatic Abscess, in*

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Cause.
1834	Subcutaneous.	24	Sempstress.	Recently confined; had nursed six days.	Left breast	Following confinement
,,	Glandular.	21	,,	,, ,,	,, ,,	,,
,,	Deep-seated	24	Glove-maker.	——	Right breast	Chilblain.
1835	Subcutaneous	19	Servant.	Recently confined; had not nursed.	,, ,,	Following confinement
,,	,,	26	Housemaid.	One child; had nursed.	,, ,,	Fall.
,,	,,	20	Servant.	Pregnant.	,, ,,	Contusion.
,,	Glandular.	24	Sempstress.	Recently confined; had nursed.	Both breasts	Following confinement
,,	,,	17	—	Recently confined.	,, ,,	—
,,	,,	22	Wife of a gardener.	,, ,,	,, ,,	Following confinement
,,	Glandular and submammary.	39	Sempstress	,, ,,	Left breast	,,
,,	Submammary.	21	,,	,, ,,	,, ,,	,,
,,	,,	21	—	,, ,,	,, ,,	Contusion.
,,	,,	39	Sempstress.	,, ,,	,, ,,	Following confinement
,,	Subcutaneous.	38	Labouring woman.	——	,, ,,	Blow.
,,	,,	26	Housemaid.	——	Right breast	,,
1836	Glandular.	33	Sempstress.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	33	Stocking-maker.	Recently confined.	,, ,,	,,
,,	,,	36	Milk-woman.	Three children; recently confined.	Both breasts	,,
,,	Submammary.	21	Sempstress.	Two children.	Right breast	Cracks.
,,	,,	32	,,	——	Left breast	—
,,	Subcutaneous.	19	,,	Recently confined; had nursed.	Right breast	Following confinement
,,	,,	25	Cook.	——	Left breast	,,
1837	,,	19	Colourist.	Pregnant.	—	—
,,	Areolar.	24	Sempstress.	Two children; recently confined; had nursed.	Right breast	Following confinement
,,	Glandular.	26	,,	Recently confined.	,, ,,	,,

RESUME.

direction, by Pupils, affords the following resumé of facts concerning more than 200 *Cases, had I included all the examples of Cold my possession.*

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; poultices.	—	Improvement.	—	
Opened spontaneously; compression.	Multiple.	,,	—	
Incision; poultices.	Abscess in axilla.	Cured.	2 months.	
Incision; poultices; compression.	Inflammation of axillary glands.	,,	22 days.	Consecutive engorgement; good effects of compression.
Iodide of lead ointment; compression; leeches; poultices.	—	,,	1 week.	
Incision; opened spontaneously; poultices.	—	,,	7 weeks.	
Incision; poultices; iodide of lead ointment; compression.	Multiple.	Nearly cured	2½ months	
Incision; compression.	—	Cured.	38 days.	Consecutive submammary abscess; good effects of compression.
Incision; poultices; compression.	—	Went out before being cured.	22 ,,	
Incision; poultices; iodide of lead ointment.	—	Cured.	16 ,,	
Incision; poultices.	—	,,	22 ,,	
,, ,,	—	,,	13 ,,	
,, ,,	New abscess; incision.	,,	19 ,,	
,, ,,	—	,,	11 ,,	
Incision; poultices; leeches.	New abscess.	,,	1 month.	
Incision; poultices; tincture of iodine.	—	Almost cured.	22 days.	
Incision; poultices; blister.	Multiple.	Not cured.	56 ,,	
,, ,,	—	Cured.	19 ,,	
Leeches; poultices; incision; compression.	—	,,	11 ,,	
Opened spontaneously; poultices.	—	,,	10 ,,	
Incision; poultices.	—	Nearly cured	6 ,,	
Incision; poultices; mercurial ointment.	—	,,	9 ,,	
——	—	Stationary.	—	
Incision; poultices.	—	Nearly cured	16 ,,	
,, ,,	Multiple	Cured.	25 ,,	

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Cause.
1837	Glandular.	48	Mattress-maker.	Ten children; the last in 1828.	Right breast	A chill.
,,	,,	20	Sempstress.	——	Left breast	—
,,	,,	28	Servant.	Recently confined.	Right breast	Following confinement
,,	,,	25	Cook.	Recently confined; had nursed.	Left breast	,,
,,	,,	20	Housemaid.	Recently confined.	Both breasts	,,
,,	,,	21	Wife of a wood-gilder.	,, ,,	Right breast	A chill.
,,	,,	29	Shopwoman.	Recently confined; had nursed.	Both breasts	Following confinement
,,	,,	50	Grocer's wife.	——	Right breast	Contusion.
,,	Submammary.	26	Sempstress.	Recently confined; had nursed.	,, ,,	Following confinement
,,	,,	22	Cook.	Recently confined; had not nursed.	—	,,
,,	,,	32	—	Recently confined; had nursed.	Left breast	,,
,,	,,	20	Polisher.	Recently confined.	,, ,,	,,
,,	,,	24	Labouring woman.	,, ,,	Right breast	,,
,,	,,	21	Sempstress.	Pregnant.	—	—
,,	,,	25	Servant.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	33	Labouring woman.	Two children.	,, ,,	Contusion.
,,	,,	26	Servant.	Three children; recently confined; had nursed.	Right breast	Following confinement
,,	,,	18	Laundress.	Recently confined; had nursed.	,, ,,	Contusion.
,,	,,	18	Artificial-flower-maker.	Two children; recently confined; had nursed.	Both breasts	A chill.
1839	Subcutaneous.	25	Sempstress.	Recently confined; had nursed.	Right breast	Following confinement
,,	Glandular.	20	,,	Recently confined.	Left breast	A chill.
,,	,,	18	Servant.	,, ,,	,, ,,	Following confinement
,,	Glandular and submammary.	25	,,	,, ,,	Right breast	,,
1840	Subcutaneous.	15	——	——	,, ,,	—
,,	,,	24	Polisher.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	21	Servant.	——	Right breast	Contusion.
,,	Glandular.	21	Sempstress.	——	Left breast	Blow.
,,	,,	22	,,	Two children; recently confined.	,, ,,	Following confinement
,,	,,	22	Wife of a grinder.	Recently confined.	Right breast	,,
,,	Areolar.	15	Sempstress.	——	Left breast	Eczema.
,,	Submammary.	16	—	——	Right breast	—

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; poultices.	—	Cured.	7 days.	
Incision; compression.	—	,,	43 ,,	
Opened spontaneously; incision; poultices.	Multiple.	,,	11 ,,	
Blisters; mercurial ointment; calomel.	—	,,	19 ,,	
Opened spontaneously; incision.	—	,,	17 ,,	
Incision; poultices.	—	,,	15 ,,	
Incision; compression.	New abscess; incision.	,,	35 ,,	
Compression.	—	,,	18 ,,	
Opened spontaneously; poultices.	—	Nearly cured	6 ,,	
Opened spontaneously; poultices; mercurial ointment; iodide of lead ointment; compression.	—	,,	27 ,,	
Incision; poultices.	—	,,	5 ,,	
,, ,,	—	Cured.	12 ,,	
Incision; blister; calomel; compression.	—	,,	3 months.	
Incision; poultices.	—	,,	13 days.	
,, ,,	Two abscesses; incision.	Rapidly cured.	—	
Incision; poultices; compression.	—	Cured.	33 days.	
Opened spontaneously; poultices.	Two abscesses.	,,	35 ,,	
Incision; poultices.	—	,,	13 ,,	
Opened spontaneously, left breast; incision in right breast; compression.	—	,,	28 ,,	
Incision; poultices.	—	,,	13 ,,	
Leeches; mercurial ointment; incision; poultices.	—	,,	30 ,,	
Leeches; liniment. ammoniæ; compression; incision.	—	,,	3 months.	
Incision; mercurial ointment; poultices.	—	,,	3 days.	
Opened spontaneously; poultices.	—	,,	3 ,,	
Incision; poultices.	—	Nearly cured	5 ,,	
Opened spontaneously; poultices.	Multiple.	Cured.	4 weeks.	
Incision; poultices.	Fresh abscess.	,,	21 days.	
Incision; poultices; mercurial ointment.	—	Nearly cured	5 weeks.	
Incision; poultices.	Fistulæ and separation of integument of breast and back	Died.	18 days.	
White precipitate ointment.	—	Remained in same condition.	—	
Incision; poultices.	—	Cured.	7 days.	

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Cause.
1841	Subcutaneous.	21	Servant.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	20	Wife of a hatter.	,, ,,	Right breast	,,
,,	,,	22	Sempstress.	,, ,,	,, ,,	,,
,,	Areolar.	23	Servant.	Recently confined.	Left breast	,,
,,	Glandular.	24	,,	Recently confined; had nursed.	Right breast	,,
,,	,,	28	,,	Three children; had nursed.	Left breast	—
,,	Submammary.	25	Sempstress.	Several children; recently confined.	Both breasts	Following confinement
,,	,,	22	,,	Recently confined; had nursed.	Right breast	,,
1842	Subcutaneous and deep-seated.	25	,,	,, ,,	,, ,,	Blow.
,,	Glandular.	23	—	,, ,,	Left breast	—
,,	,,	27	Servant.	,, ,,	Both breasts	Following confinement
,,	Submammary.	23	Sempstress.	Recently confined.	Right breast	,,
,,	,,	22	Servant.	Recently confined; had nursed.	,, ,,	,,
1843	Subcutaneous.	22	Sempstress.	,, ,,	Left breast	,,
,,	,,	21	Servant.	Pregnant.	Right breast	—
,,	,,	16	Lace-maker.	——	,, ,,	Blow.
,,	,,	21	Servant.	Recently confined; had nursed.	—	Following confinement
,,	Glandular.	22	Sempstress.	,, ,,	Left breast	Cracks.
,,	Chronic.	37	,,	——	,, ,,	—
,,	Glandular.	23	Servant.	Recently confined; had nursed.	Right breast	Following confinement
1844	Subcutaneous, parenchymatous, and deep-seated.	18	Shoebinder.	Had nursed.	Both breasts	—
,,	Subcutaneous.	24	Glover.	——	Right breast	Resulting from abscess in axilla.
,,	Glandular.	19	Lace-maker.	Recently confined; had nursed.	Both breasts	Following confinement
,,	Glandular, cold	23	Colourist.	Confined a year.	Left breast	—
,,	Glandular.	30	Wife of a hatter.	Recently confined.	Both breasts	Following confinement
,,	,,	24	Laundress.	Recently confined; had nursed.	Left breast	,,
,,	,,	23	Sempstress.	,, ,,	,, ,,	,,
,,	Glandular, multiple.	21	Servant.	Recently confined.	Both breasts	,,

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; poultices.	—	Cured.	7 days.	
Opened spontaneously.	Two abscesses of breast, and abscess of axilla.	Nearly cured	19 „	
„ „	Two abscesses; incision.	Cured.	13 „	
„ „	—	„	13 „	
Compression.	Symptoms of pleurisy.	„	15 „	
Leeches; incision; poultices; compression.	Pleurisy; bleeding.	„	30 „	
Compression; poultices; incision.	—	Nearly cured	19 days.	
Opened spontaneously; incision; compression.	Two abscesses; incision.	Cured.	2 months.	
Incision; poultices; compression.	—	Nearly cured	30 days.	
——	—	Remained in the same condition.	—	
Opened spontaneously; iodide of lead ointment; compression.	Fresh abscess.	Cured.	38 days.	
Opened spontaneously; poultices; compression.	—	Nearly cured	46 „	
Opened spontaneously.	—	Cured.	11 „	
Incision.	—	„	11 „	
„	—	„	28 „	Confined prematurely.
Incision; poultices.	—	„	6 „	
„ „	—	„	8 „	
Opened spontaneously; incision.	—	Nearly completely cured.	6 „	
Incision; poultices.	—	Nearly cured	25 „	
Opened spontaneously.	—	Uncured.	—	
Incision; poultices; compression.	Irregular smallpox.	Cured.	53 days.	
Iodide of lead ointment; compression.	Abscess of axilla.	„	75 „	
Incision; poultices; compression; sal ammoniac lotion.	—	Went out before being cured.	30 „	
Incision; poultices.	—	Nearly cured	8 „	
„ „	—	„	34 „	
Opened spontaneously; incision; compression.	Fresh abscess.	„	38 „	
Incision; compression.	—	Cured.	31 „	
Incision; poultices; compression.	—	„	2 months 7 days.	

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Cause.
1844	Submammary.	24	Sempstress.	Had nursed.	Right breast	—
,,	,,	23	,,	,,	Left breast	Following confinement
,,	,,	25	,,	Recently confined.	Left breast	—
1845	Subcutaneous.	21	,,	Recently confined ; had nursed.	Right breast	Following confinement
,,	,,	19	Laundress.	,, ,,	Left breast	,,
,,	Glandular.	16	Servant.	——	Right breast	—
,,	,,	22	Sempstress.	Confined three weeks.	,, ,,	—
,,	,,	26	Laundress.	Confined three months ; had nursed.	—	Following confinement
,,	,,	22	Servant.	——	Left breast	Blow.
,,	Submammary.	22	Lace-maker.	Two children ; had not nursed.	,, ,,	—
,,	,,	23	Sempstress.	Recently confined ; had nursed.	Right breast	Following confinement
,,	,,	19	Bonnet-maker.	Recently confined.	Left breast	,,
1846	Subcutaneous.	27	Servant.	Two children ; had nursed.	Right breast	,,
,,	Glandular.	20	——	,, ,,	Left breast	,,
,,	,,	31	Servant.	Recently confined ; had nursed.	,, ,,	,,
,,	,,	20	,,	,, ,,	,, ,,	,,
,,	,,	20	Artificial-flower-maker.	——	,, ,,	—
,,	,,	19	Sempstress.	Recently confined ; had nursed.	Both breasts	Following confinement
,,	,,	26	Cook.	One child.	Left breast	—
,,	Submammary.	28	Labouring woman.	Recently confined ; had nursed.	Right breast	Following confinement
1847	,,	19	Sempstress.	——	Left breast	—
,,	Submammary, cold.	19	——	——	—	—
,,	Subcutaneous.	21	Servant.	Pregnant.	Right breast	—
,,	,,	43	Cook.	——	,, ,,	—
,,	,,	28	Wife of a jeweller.	Several children ; had nursed.	Left breast	—
,,	Subcutaneous, areolar.	19	Bookbinder.	——	,, ,,	—
,,	Subcutaneous.	22	——	——	—	—
,,	Glandular.	24	Sempstress.	One child.	Left breast	—
,,	,,	32	Labouring woman.	Three children ; had nursed.	,, ,,	—
,,	,,	55	Sempstress.	——	,, ,,	—
,,	,,	22	Labouring woman.	Recently confined.	Right breast	Following confinement
,,	,,	22	Servant.	Recently confined ; had nursed.	,, ,,	,,

Treatment.	Complications.	Termination.	Duration.	Observations.
Incisions; poultices; compression.	—	Cured.	51 days.	
Incision; poultices.	—	,,	2 ,,	
,, ,,	—	,,	4 ,,	
,, ,,	—	,,	10 ,,	
,, ,,	—	,,	13 ,,	
,, ,,	—	,,	19 ,,	
Incision; compression.	—	Went out before being cured.	3 ,,	Returned next day, and remained 24 days, but left again before being cured.
Opened spontaneously; incision; poultices.	Two abscesses; incision.	Cured.	12 ,,	
Incision; poultices.	—	,,	9 ,,	
Opened spontaneously; compression.	—	,,	22 ,,	
Incision; poultices.	—	,,	12 ,,	
,, ,,	—	,,	26 ,,	
,, ,,	—	,,	8 ,,	
Purgatives; blister; compression.	Lactiferous fistulæ.	,,	—	
Opened spontaneously; poultices; compression.	—	,,	20 days.	
Incision; poultices.	Erysipelas; two abscesses.	,,	57 ,,	
Incision.	Erysipelas; gangrene; abscess of axilla.	,,	56 ,,	
Incision; compression.	—	,,	23 ,,	
Opened spontaneously; incision; poultices.	—	,,	10 ,,	
Opened spontaneously; poultices.	—	,,	10 ,,	
Incision; poultices.	Axillary abscess; incision.	Cured.	5 weeks.	
Blister.	Cold abscess in loins.	Died.	3 months. 16 days.	
Incision; poultices.	—	Cured.	28 ,,	
,, ,,	—	,,	8 ,,	
,, ,,	—	,,	5 ,,	
,, ,,	—	,,	4 ,,	
,, ,,	—	,,	9 ,,	
Incision; poultices; compression.	—	,,	9 ,,	
Caustic potash; Vienna paste; compression; iodide of lead ointment.	—	,,	15 ,,	
Leeches; iodide of lead ointment; incision; poultices; compression.	—	,,	6 months.	
Incision; poultices.	—	,,	2 months. 20 days.	
Incision; poultices; compression.	—	,,	—	

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Causes.
1847	Glandular.	25	Servant.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	32	Sempstress.	,, ,,	Right breast	,,
,,	,,	20	,,	——	Left breast	—
,,	,,	25	Servant.	One child; had nursed.	,, ,,	Following confinement
,,	,,	25	—	Recently confined; had nursed.	,, ,,	,,
,,	Glandular, lactiferous.	18	Sempstress.	One child; had nursed.	Right breast	,,
,,	Submammary.	22	,,	——	,, ,,	Contusions.
,,	,,	33	Milliner.	One child; had nursed.	Both breasts	Following confinement
,,	,,	48	Labouring woman.	Seven children; had nursed.	—	Caries of ribs.
1848	Subcutaneous.	18	Laundress.	——	Left breast	Contusions.
,,	,,	16	,,	——	,, ,,	,,
,,	,,	33	Servant.	Pregnant.	Right breast	,,
,,	Glandular.	23	—	Recently confined; had nursed.	,, ,,	Following confinement
,,	,,	28	Sempstress.	,, ,, ,,	Left breast	,,
,,	,,	21	Servant.	Recently confined; had not nursed.	,, ,,	—
,,	,,	18	Ironer.	,, ,, ,,	,, ,,	A chill.
,,	,,	26	—	Recently confined.	Right breast	Following confinement
,,	Glandular, chronic.	25	Laundress.	——	Left breast	Blows.
,,	Submammary.	23	Servant.	Recently confined.	Right breast	—
,,	,,	21	Cheese-maker.	,, ,,	,, ,,	Following confinement
1849	Subcutaneous.	23	Sempstress.	Recently confined; had nursed.	,, ,,	,,
,,	Glandular.	25	—	Pregnant.	Left breast	—
,,	,,	21	Servant.	Recently confined.	,, ,,	A chill.
,,	,,	39	—	Recently confined; had nursed.	,, ,,	Following confinement
,,	,,	20	—	——	Right breast	—
1850	Subcutaneous.	21	Labouring woman.	Recently confined.	—	Following confinement
,,	,,	18	Sempstress.	No children.	Left breast	—
,,	Subcutaneous multiple.	25	Cook.	Recently confined; had nursed.	Both breasts	Following confinement
,,	Glandular.	25	Laundress.	Recently confined.	Left breast	,,
,,	,,	19	Sempstress.	,, ,,	—	—

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; poultices.	—	Cured.	10 days.	
Opened spontaneously; incision; poultices; compression.	—	,,	17 ,,	
Incision; poultices.	Erysipelas of thorax.	,,	3 weeks.	
,, ,,	—	,,	7 ,,	
Nine incisions in 15 days.	—	,,	1 month.	
Puncture; injection of decoction of marsh mallow; poultices.	—	,,	15 days.	
Leeches; mercurial ointment; blister; poultices.	—	,,	3 weeks.	
Leeches; incision; poultices.	—	Almost completely cured	,,	
Incision; poultices; compression.	—	Died.	35 days.	
Opened spontaneously; poultices.	—	Cured.	4 ,,	
Incision; poultices.	—	Almost completely cured	12 ,,	
,, ,,	—	,,	20 ,,	
,, ,,	Gastric disturbance.	Cured.	31 ,,	
Opened spontaneously; poultices.	Two abscesses; incision.	,,	12 ,,	
Incision; poultices.	Two abscesses; incision; erysipelas.	,,	2 months	
,, ,,	—	,,	5 weeks.	
,, ,,	—	,,	25 days.	
Leeches; incision; poultices.	—	,,	31 ,,	
Opened spontaneously; compression.	Two abscesses; incision; eczema.	,,	13 ,,	
Incision; poultices.	—	,,	10 ,,	
,, ,,	—	,,	7 ,,	
Opened spontaneously; poultices.	—	,,	6 ,,	
Leeches; poultices; incision; bleeding.	—	Almost completely cured	25 ,,	
Incision; poultices; mercurial ointment.	—	Cured.	20 ,,	
Incision; poultices.	—	,,	3 weeks.	
——	—	Almost completely cured	1 day.	
Incision; poultices.	—	Cured.	5 days.	
,, ,,	—	,,	12 ,,	
Opened spontaneously; poultices.	—	Incompletely cured.	7 ,,	
Opened spontaneously; incision; injection of iodide and tannin; purgatives.	Measles.	Not cured.	2½ months	

Date.	Species.	Age.	Occupation.	Confinement.	Seat.	Cause.
1850	Glandular.	44	Labouring woman.	Two children.	Right breast	—
,,	Glandular, chronic.	26	Laundress.	Several children.	,, ,,	—
,,	Submammary.	27	Shopwoman.	Recently confined; had nursed.	Left breast	Following confinement
,,	,,	20	Pasteboard-maker.	,, ,, ,,	,, ,,	,,
,,	,,	29	Servant.	——	Right breast	A fall.
1851	Subcutaneous.	15	Artificial-flower-maker.	Had not menstruated.	Left breast	—
,,	,,	50	Laundress.	——	—	A blow.
,,	Glandular.	33	Sempstress.	Three children.	Right breast	—
,,	,,	30	Lace-maker.	Three children; recently confined.	Left breast	Following confinement
,,	,,	26	Laundress.	Recently confined; had nursed.	,, ,,	,,
,,	,,	27	Sempstress.	Two children; recently confined; had nursed.	,, ,,	,,
,,	Parenchymatous.	25	Cook.	Recently confined; had nursed.	Both breasts	—
,,	,,	29	Housewife.	,, ,, ,,	,, ,,	Following confinement
,,	Parenchymatous, and submammary.	59	Sempstress.	,, ,, ,,	Right breast	Needle impacted in breast.
1852	—	25	Labouring woman.	——	,, ,,	—
,,	Parenchymatous.	22	Sempstress.	Recently confined; had nursed.	,, ,,	Weaning.
,,	,,	23	Lace-maker.	Recently confined; had nursed for 15 days.	Both breasts	Following confinement
,,	Subcutaneous.	36	Servant.	——	Right breast	—
,,	Parenchymatous.	22	Laundress.	——	,, ,,	—
,,	,,	29	Hair-worker.	Confined 2 months, and nursed 15 days.	Left breast	Following confinement
,,	,,	25	Toy-seller.	——	Right breast	—
,,	Areolar.	18	Sempstress.	Recently confined; had nursed.	Left breast	Following confinement
,,	Parenchymatous.	23	Servant.	,, ,, ,,	,, ,,	Weaning.
,,	,,	31	Sempstress.	Confined for the fifth time a month before; had nursed.	Right breast	Following confinement
,,	Subcutaneous.	30	Servant.	——	,, ,,	—

Treatment.	Complications.	Termination.	Duration.	Observations.
Incision; poultices.	Phthisis.	Cured.	10 days.	
,, ,,	Erysipelas; abscess.	,,	5 weeks.	
Blisters; mercurial ointment; incision; poultices.	Vesicular erythema.	,,	20 days.	
Incision; poultices; compression.	Erysipelas.	,,	2½ months	
Incision; poultices; seton.	Two abscesses; incision.	,,	65 days.	
Opened spontaneously; poultices.	—	,,	8 ,,	
Incision; poultices.	—	,,	11 ,,	
,, ,,	—	,,	12 ,,	
Leeches; incision; poultices.	—	,,	15 ,,	
Opened spontaneously; poultices.	—	,,	6 ,,	
Incision; poultices.	—	,,	6 ,,	
,, ,,	—	,,	20 ,,	
Opened spontaneously; incision; poultices.	—	,,	1 month.	
Incision; poultices.	—	,,	58 days.	
——	—	—	11 ,,	
Incision; poultices.	—	Cured.	12 ,,	
Several incisions; poultices.	—	,,	23 ,,	
Incision; poultices.	—	,,	33 ,,	
Leeches; incision; poultices.	—	,,	14 ,,	
Incision; poultices.	—	,,	15 ,,	
Incision; poultices; cod-liver oil.	Three fistulous sinuses.	Uncured.	37 ,,	
Three incisions; poultices.	—	Cured.	12 ,,	The patient was phthisical.
Blisters; iodide of lead ointment; compression.	—	,,	33 ,,	
Incision; poultices.	—	,,	8 ,,	
Poultices.	—	,,	6 ,,	

The examination of these tables, and of some cases in the text, show a final result of 3 deaths; 139 cures; 28 incomplete cures; and 5 patients leaving the hospital uncured.

21 with complications:

Erysipelas	5
Abscess in axilla	6
Abscess of the neck or back	2
Smallpox	2
Pleurisy	2
Phthisis, eczema, erythema, gastric disturbance	4

The disease occurred:

In the right breast	75 times.
„ left „	75 „
In both breasts	23 „

The ages of the patients were:

From 15 to 20 years	in 30 cases.
20 to 30 „	116 „
30 to 40 „	23 „
40 to 50 „	5 „
50 to 60 „	3 „

The varieties of abscess were:

Subcutaneous	37
Submammary	38
Parenchymatous	95
Not specified	6

The occupations of the patients were:

Sempstresses	35
Servants	41
Haberdashers	11
Countrywomen	4

And the rest unknown.

The causes were:

Contusions	20 times.
Eczema	3 „
Pregnancy	7 „
Following confinement	110 „
Cracks in nipple solely	2 „
A needle impacted in breast	1 „
Chills	6 „

As regards suckling :

Had nursed	75
Had not nursed	4

The cases occurred in the following years :

1834	3
1835	10
1836	7
1837	24
1839[1]	4
1840	8
1841	8
1842	5
1843	7
1844	11
1845	9
1846	10
1847	19
1848	11
1849	5
1850	10
1851	9
1852	15

[1] My cases for the year 1838, were to some extent mislaid, and I did not think of employing the others.

It will be observed, that a *resumé* of the cases of lactiferous engorgement is given in another table, and that the text contains cases that are not entered in the general table. It must not be overlooked, however, that in consequence of a deficiency in precise notes and dates, I have omitted in this statistical account, all the cases occurring in my private practice, and a portion of those from the hospital, although I have made use of them in the body of the work.

CHAPTER II.

DISEASES OF INNOCENT NATURE—NOT INFLAMMATORY.

I. CONTUSIONS.

Like all other parts of the body, and more frequently than some, the mamma is liable to suffer from external violence of various kinds—from blows, pressure, and all varieties of bruises and contusions. Its situation, size, and shape, and the manner in which it projects in front of the most exposed part of the thorax, sufficiently explains this unfortunate circumstance. There is hardly a woman who has not, at one time or another, bruised her breast against some piece of furniture or article of the toilet; and there are equally few who have passed through life without incurring some injury from their stays, and other articles of dress. Many, also, have received injuries from the rough movements of a child, or other person with whom they may have been sleeping. In their recreations, as well as in the exercise of their maternal functions, and, in fact, in every act of their lives, women are exposed to blows and injuries of the mamma.

Ecchymosis, the principal feature of contusion, occurs in the breast in two forms, apparently very different, although in reality essentially analogous. I mean that ecchymosis may occur in the mammary region, independently of external violence or contusion, as well as in consequence of it.

§ 1. SPONTANEOUS ECCHYMOSIS, OR THAT WHICH OCCURS INDEPENDENTLY OF CONTUSION.—Anything that may at first appear paradoxical in this title, disappears when we call to mind what often falls under our observation. All surgeons are familiar with the extensive ecchymoses, and large, red, violet, or livid spots, which occasionally appear in the conjunctiva without apparent cause. These spots, which generally arise during sleep, and without pain, and are not perceived until the patient looks in the glass in the morning, or has his attention called to them by some one else, usually occur without our being able to explain in what manner. Now, what takes place in the conjunctiva, in this way, may also take place in the

breast. I myself, in common with A. Cooper, who was the first to draw attention to them, have, in many instances, seen these ecchymoses and spots arise spontaneously, independently of pressure or contusion. They are met with especially about the menstrual period, or when this function is about to cease, or is painfully or irregularly performed. I have seen several examples in girls of eighteen, in chlorotic women, and in others who suffered under some uterine affection.

Although usually indolent, spontaneous ecchymosis of the breast is occasionally accompanied by sharp pain. Generally there is no engorgement or induration, and the affected parts retain their elasticity. It may be seated in any of the tissues of the mamma, but especially in the glandular structure and subcutaneous cellular tissue. These ecchymoses are generally tolerably large, and have a brown or yellow tint, less vivid, and somewhat more inclined to a grey colour than in ordinary ecchymosis.

Produced by slight infiltration of blood, they do not in themselves constitute a serious affection; and when uncomplicated, rarely last more than from a fortnight to a month. We see them gradually arise, become lighter in colour, and finally disappear without leaving any marks behind, and without the patient attending much to them. All that we can do for them is reduced to the application of resolvent lotions, to general bleeding, or the employment of a few leeches; whilst, at the same time, we act on the bowels, or administer appropriate emmenagogues, rather as precautionary measures, than as indispensable treatment.

When, however, the spots are accompanied by pain and pricking, the general health must be attended to, rather than the breast. I have, in fact, seen the mammæ of females, whose menstruation was irregular, covered with spontaneous ecchymoses, and the seat of painful pricking and some swelling, but who, nevertheless, got well without any local treatment in the course of from fifteen to twenty days. This occurred in a case of the kind communicated to me by M. Deville.

Case.—Paillet, a labouring woman, æt. 28, who had been confined twenty-two months, came into La Pitié, under the care of M. Gendrin, on the 22d of December, 1843, with an ovarian tumour on the right side. She had not menstruated for four months.

January 4th.—The menses re-appeared, but on the next day, the patient stated that they had already ceased; and her chest being accidentally uncovered, a greenish yellow spot of ecchymosis was observed on the upper and inner side of the left breast.

6th.—The ecchymosis, which did not seem to have arisen from any kind of external violence, extended on the outer side to the axilla, and on the 7th, occupied all the upper half of the breast, which was affected with painful pricking, whilst the ecchymosed spot itself was very sensible to the pressure of the finger.

It disappeared by degrees in the inverse order of its appearance, and during the whole time that it lasted, was accompanied by lancinating pain and heightened sensibility of the integuments.

14th.—There remained only a little spot above and on the inner side of the breast; the pain had vanished, and was succeeded by itching.

It is, perhaps, not impossible that ecchymosis may become the source and starting point of serious disease; for how can it be affirmed that certain tumours and cysts, &c., have never had, for their primary cause, some drop of blood effused into the breast. As I shall have to discuss this question in speaking of the etiology of tumours, I shall at present content myself with merely drawing the reader's attention to it. On the other hand, this mention of it is enough to make us sensible of the necessity of not neglecting, and treating too lightly, ecchymosis of the breast, if it be at all extensive, or threaten to leave any nucleus in the tissues.

The local treatment, which, moreover, is the same for spontaneous ecchymosis as for that caused by external violence, will be more usefully dwelt on in the succeeding chapter than at the present moment.

§ 2. CONTUSION PROPERLY SO CALLED.—Contusions may give rise to an infinity of different lesions, in the skin, the subcutaneous structures, and in the gland itself. They there produce ecchymosis, and sanguineous swelling, as in any other situation. The irregularities of the breast, and its want of solidity, less readily than in other situations, permits of rupture of the adipose cells, which here separate it from the integuments; so that the blood infiltrates, rather than accumulates in a mass. Except in this peculiarity, contusions of the skin, and subcutaneous fascia of the breast are attended with no symptoms

that require to be pointed out, or are not conformable to the features of ecchymosis generally, whatever be its seat.

When deeper seated, contusions may break down, and interfere in every way with the lobes of the breast, so as to occasion various kinds of vascular ruptures.

In the case of a nurse, under my care, a contusion of the left breast produced a rupture of some of the milk-tubes, and considerable infiltration of milk. According as the ruptured blood-vessels are either greater in number, or larger in size, there results infiltration of blood, and ecchymosis irregularly distributed, or regular depots of blood, and various kinds of degeneration, as will be pointed out presently.

It is to this kind of contusion that certain tumours appear due.

Such injuries should on no account be neglected, especially when they occur in the glandular tissue itself. In fact, every foreign body permitted to remain in this tissue, incurs the danger of forming the germ of diseases which later on it may be difficult to account for. Its structure is so little favorable to reparative organic reaction, that it is never wise to leave it exposed to the effect of morbid processes, however insignificant they may appear to be. On this account it is much better to err by excess of precaution than by a want of it; for superfluous treatment is less to be dreaded than the neglect of appropriate measures.

If the contusion be at all deep-seated, it is advisable to bleed from the arm; or, if the patient's general condition seem to contraindicate this measure, to apply leeches once or twice around the nipple. In case of inflammation supervening, loss of blood can still less be dispensed with. The rest of the treatment consists in poultices, purgatives, and baths.

If the contusion have produced no general disturbance, and be only of moderate extent, general bleeding may be dispensed with, as leeches will be sufficient. In place of emollient, we may advantageously make use of vinous poultices, or of poultices sprinkled with sal ammoniac, or with lead lotion, or with laudanum should there be pain; compresses steeped in a solution of sal ammoniac, in simple water, or in oxycrat (a solution of vinegar and water), are amongst the best of such resolvents. Friction with mercurial or iodide of lead ointment is useful later on, and compression is indicated if the contusion have occasioned a certain amount of engorgement, or the formation of hard nodules which seem insoluble.

If, as I have sometimes observed, pain and some thickening remain in the breast after the disappearance of the ecchymosis, and, in spite of the employment of the remedies spoken of, it is advisable to cover the affected part with a large blister, and then to make use either of mercurial or of iodine ointment or of soap plaster, or hemlock plaster, or of Emp. de Vigo.[1]

If, lastly, the contused spot becomes hot and inflamed, so as finally to become the seat of a depot, or of an abscess, either in spite of the treatment that has been employed, or because the advice of the surgeon has been sought too late, there is nothing left but to treat the case like suppurated hematocele in general.

In the substance of the breast an ecchymosis will often remain for several days before becoming apparent. The blood, being infiltrated underneath the breast, does not in fact get beneath the skin, and transmit its blackish colour to the exterior, until after the expiration of some time. On the other hand, when it is separated from the integuments by the whole substance of the gland, it is rather at the circumference than at the anterior part of the breast that we must look for the blood-stained spots. The deep-seated cellular tissue, resilient and lamellar, and in some individuals even disposed in structure like a mucous bursa, favours rather the formation of a sanguineous depot between the surface of the thorax and the mamma, than between the latter and the integuments. The hematocele is to be recognised by the same signs as deep-seated abscesses, excepting the pain and inflammation. A yellowish or livid colour, and occasionally a more or less complete dise of ecchymosis, and an elevated and

[1 The following is the formula for the Emplastrum de Vigo cum Mercurio:

Simple Plaster (Lead plaster), ℔ij ℥viij;
Yellow Wax, ℥ij;
Resin, ℥ij;
Ammoniac. Bdellium, Olibanum, and Myrrh., āā ʒv;
Saffron, ʒiij;
Mercury, ℥xij;
Turpentine (Common European), ℥ij;
Liquid Storax, ℥vj;
Oil of Lavender, ʒij.

Powder the gum resin, and saffron, and rub the mercury with the storax and turpentine, in an iron mortar, until completely extinguished; melt the plaster with the wax and resin, and add to the mixture, the powders, and volatile oil. When the plaster is cool, but yet liquid, add the mercurial mixture, and incorporate the whole thoroughly.—Ed.

rather spongy appearance of the breast, characterise this result of contusion.

Just as anywhere else beneath the skin, a collection of blood beneath the mamma may rapidly disappear by resolution, or remain indolent, and without remarkable change for several weeks; liable, however, to various transformations, such as loss or increase of its primitive fluidity, or to heat, inflammation, and subsequent transformation into abscess.

This was the case in a woman of about forty years of age, who was under my care, in La Charité, in 1837. This patient, who was of good constitution, had struck her right breast violently against the corner of a table, six months before. After remaining for a long period indolent and stationary, the tumour became painful, about a month before the patient entered the hospital.

It was remarkable that the breast was still surrounded with the remains of an ecchymosed zone; and that fluctuation, although obscure, was evident at the base of the swelling. A bistoury was plunged into the depot, and gave exit to nearly a wine-glass of semi-coagulated blood, partly fluid, and mixed with a tolerably large quantity of pus. Being then treated as an ordinary hematic abscess, the depot healed but slowly, and was not finally cured until after the lapse of six weeks. In another patient, the deposit of blood, which arose in the same way, terminated by decreasing in size, and becoming harder and more dense. It was uncomplicated with pain or inflammation, and pressure got rid of it in the space of five weeks. On another occasion, the disease, though apparently serious, nevertheless, rapidly got well under similar treatment.

Case 1.—In June 1837, a shop-woman, æt. 50, of good constitution, came into the hospital, stating that two months before, she had received a blow from the elbow on the right breast. The pain, pretty acute at the time, gradually abated, so as to disappear almost entirely. However, a swelling shortly appeared at the external inferior part of the breast, and there was then visible an indolent tumour, without redness of the skin, of the size of a hen's egg, and surrounded with an ecchymosed mark.

This tumour, evidently formed of blood, was not apparently the seat of fluctuation; and as it was indistinctly situated in the midst of the tissues, and had somewhat diminished rather than increased in size, for some days past, I determined to attack it

by compression. General bleeding, leeches, and purgatives were put aside, and graduated compresses placed on the naked breast, and retained by a compressive bandage which enveloped all the middle part of the chest. The bandage was wetted three times a day, with a solution of hydrochlorate of ammonia, re-adjusted every morning, and finally removed at the expiration of a week. Resolution had then commenced in the tumour, and there remained only a large spot of ecchymosis, which diminished more and more. The compresses, saturated with the saline solution, were continued for some days, but without pressure, and in a week afterwards, the patient left the hospital well.

On the other hand, it is not uncommon to see contusion of the breast give rise to tolerably acute pain, and to symptoms of active inflammation. It is especially in such cases that depletory measures are indicated.

Case II.—A woman named Duval, 43 years old, lymphatic, delicate, and never enjoying very good health, entered the Clinical wards of the hospital on the 24th of October, 1838. She stated that, on the preceding evening, she had received a violent blow from the elbow on the left breast, which immediately became painful and markedly swollen. At the present time the breast is double the natural size, painful, red, and swollen, particularly in its upper half, but no fluctuation can be perceived in it. Although there was some fever, and the digestive functions were already disordered, the debilitated constitution of the patient prevented my having recourse to general bleeding, and I was compelled to employ leeches in preference. Fifty leeches were therefore applied to the painful spot, and a poultice afterwards.

The next day there was considerable improvement; the breast was less red, less painful, and diminished in size, and afterwards resolution proceeded so rapidly, that the patient quitted the hospital six days after her admission.

The physical alterations which the breast undergoes after contusion are sometimes so ill-defined, that there may be some trouble in distinguishing them from degeneration of a bad character, the more so, that sometimes the ordinary remedies fail completely, and only increase the uncertainty.

Case III.—*Induration and swelling of the left mammary gland, following a blow; failure of antiphlogistic remedies; mercurial friction and compression employed one after the other.*—Boulot, a sempstress, æt. 40, several years ago received a blow in the left breast; she paid no attention to the pain which followed the blow, only remarking that subsequently menstruation was ushered in by intense dull pain in the part, and that it disappeared when the menses ceased.

Six weeks ago she received a fresh blow with the elbow, violent enough to cause great and instantaneous suffering. From that moment she observed a swelling, which she had never noticed before, in the left breast; and as this tumour increased in size as well as pain, the patient came to the hospital with this engorgement and morbid process going on in the tissues of the gland.

May 28th.—Twenty-five leeches to the base of the breast, or rather to the indurated mammary gland; the leeches rapidly diminished the swelling, and for a day got rid of the pain.

29th.—The pain returned; the induration and engorgement remaining the same. A poultice.

30th.—Mercurial friction; and the affected breast to be supported with the bandage, to which the poultice is attached, so as to commence compression.

31st.—The friction and poultices continued. Pain less intense. Keep up the moderate compression.

June 2d.—One gland is hypertrophied, and lumpy, and the induration continues in spite of the treatment; the pain is fleeting, but lancinating, like that which accompanies the formation of cancer.

4th.—Same condition. Leeches, mercurial ointment, poultices.

14th.—The patient has had more pain, and the induration seems to have increased a little.

15th.—Circular compression with strips of diachylon plaster.

16th.—The breast less painful since the circular compression.

18th.—Compression discontinued; the gland still large, hard, lumpy, and painful to the touch, towards its inferior and external part. The compression was recommenced by means of bands of sticking plaster.

29th.—Headache; fever; pain more intense. Compression continued.

30th.—The patient has less headache to-day; no fever. To be bled.

July 1st.—The patient left this morning, the gland being as

swollen as on admission, but rather harder, and more sensitive, still, however, preserving the characters of simple hypertrophy in all respects.

This patient was lost sight of; but it was evident to me, that the tumour, which was of innocent nature, was curable only by operation, and also, that it had originated from the two contusions spoken of.

On other occasions, such tumours have easily and rapidly disappeared.

Case iv. — *Contusion ; recent tumour ; rapid cure.*[1]

We also meet with patients who have received a blow, and continue to suffer and complain for whole months after the total disappearance of every material trace of the contusion.

Case v.—Thion, æt. 45, a sempstress, came into the hospital on the 3d of October, 1842, stating that she had a swelling in her right breast, which had followed a blow with the elbow, six months before. Various plasters and ointments had been unsuccessfully employed by the patient, who seemed very nervous about her condition, and said that she suffered much. The pain extended as far as the shoulder. However, the affected breast was not sensibly larger than the other, and the most attentive examination could not detect either tumour, induration, or appreciable alteration in its structure. Friction with an anodyne liniment, and, afterwards, with iodide of lead ointment, were prescribed; and the breast was slightly supported in front, and on the inner side. The patient came for consultation twice in the space of six months, but finally became relieved from her anxiety, as the breast had undergone no kind of degeneration.

I cannot say how often I have met with similar cases. If they occur in patients who desire to be treated in the hospital, we must carefully inquire whether the sufferings they complain of are not occasionally simulated ; but in private practice, such a suspicion is rarely admissible. Although the latter class of patients perhaps exaggerate the amount of pain, either from excess of sensitiveness or of fear, they would not consult the

[1] The details have been omitted.—Ed.]

surgeon at all, if they really felt nothing, and had no pain to engage their attention. Now, I have seen many such persons, in whom every trace of contusion had disappeared, who still complained of positive pain in the injured mamma, and were a prey to great anxiety. Although we must occasionally attribute a good deal to pre-occupation of the mind, to fear, and to the moral condition, it is important to watch the progress of these patients, and to combat their sufferings by topical applications, both such as produce resolution and such as allay suffering, by emollient or mucilaginous baths, and by occasional purgatives.

In short, contusions produce the same disorders in the breast as elsewhere, and may prove the source of the same symptoms; and thus, it is desirable to apply the same prognosis, and the same general treatment to them as in other situations. Of all organs, the breast is the one in which contusions require to be most closely watched, and to be treated with a certain amount of energy. If they give rise to deposition, and to collections of blood, which resist bleeding, topical applications, compression, purgatives, and baths, it is prudent to open and empty them early with cutting instruments. We can hardly count on the efficacy of shampooing or active pressure with the hand, in such cases, on account of the want of counteracting force, and of the irregularity of the breast upon which the pressure has to be exerted. Blisters are not by any means to be despised, especially if the other means fail, and the patient be unwilling to submit to the knife.

Further on, in the article on *Cysts*, examples will be met with showing the complications and results which occasionally follow contusions of the breast.

II. INDOLENT TUMOURS OF INNOCENT NATURE.

Almost all the innocent diseases which I have yet to speak of have been, and are still, described under the title of *tumours*. Although the expression is wanting in exactitude in more than one point, I shall yet employ it for want of a better, and because the mere name does not prevent our investigating the subject in the most searching manner.

Tumours of the breast present such great diversities of form and nature, that we soon become sensible of the necessity of making distinct groups of them. Their classification is, however, somewhat difficult. In the year 1838, I arranged a table of them, which included tumefactions, chronic swellings, and all the tumours which, when uninterfered with, are not liable to malignant degeneration, or which, at all events, rarely undergo such an unfortunate transformation. We thus embrace a large class—hypertrophies, engorgements, a certain number of cysts, and several varieties of tumours, which may be arranged as follows :

1. Hypertrophies.
   - *a.* Of the gland.
   - *b.* Of the cellular tissue.
   - *c.* Of the fatty tissue.
2. Engorgements.
   - *a.* Of the cellular tissue.
   - *b.* Of the glandular tissue.
3. Cysts . . . .
   - *a.* Sebaceous.
   - *b.* Gelatinous.
   - *c.* Hæmatic.
   - *d.* Lactiferous.
4. Tumours . . .
   - *a.* Lipomatous.
   - *b.* Fibrinous.
   - *c.* Butyrous.
   - *d.* Tubercular.
   - *e.* Osseous.
   - *f.* Granular, or nodulated.
   - *g.* Adenoid, called partial hypertrophies.
5. Imaginary tumours.

These classes become readily subject to further subdivision; for besides that the varieties may be included in the description of the principal forms, it would also be more injurious than useful to fatigue the reader by names which have no concern with practice.

§ 1. INDOLENT ENGORGEMENTS.—Literally understood, the language of certain practitioners would lead to the belief that engorgements of the breast structure itself are very frequent, although, in truth, they are not so. To explain: by itself, the word *engorgement* is almost synonymous with *swelling* and *intumescence;* and in this point of view, almost all diseases of the mamma, whether acute or chronic, might be included in the category of engorgements. We may be sure that no one could desire to give so wide a signification to an expression which ought only to refer to one distinct disease. This term, moreover, has been more particularly employed to designate chronic swellings, but in that case it expresses nearly the same thing as the word *tumour;* and in preserving it, we must, at any rate, acknowledge a pretty large number of varieties, just as we have done in the case of tumours: it is, in short, too vague a term, and of too small value, to be retained in the exact language of science.

Before pathological anatomy enabled us to appreciate and analyse changes and alterations in tissues consequent on disease, it was necessary to make use of a term which, at all events, pointed to the most striking characteristic, that is to say, to the increase in the size of the affected part. In the present day, science no longer stops here; the different lesions to which the breast is subject are well enough known, to enable us to consider them one by one, to isolate, and in some degree to give the individual history of each. It is, therefore, only as a collective title, that it is now allowable to employ the word *engorgement;* understood in any other way as applicable to the breast, it indicates as great poverty of language as *white swelling* does in the pathology of the joints.

What, then, does the word *engorgement* mean? A sort of thickening and want of flexibility in the diseased tissues, either with or without induration, and without the formation of new products, or the existence of unhealthy transformations.

Now, the question arises whether such a condition can be anything else than hypertrophy, than the result or the symptom of some subacute inflammatory process, or of subacute inflammation. The fashion of employing the word engorgement has already undergone various alterations.

Before the reign of pathological anatomy, its use was explained by the ignorance which prevailed as to the nature of the different swellings of the breast, and by the impossibility

which surgeons experienced of giving names to each particular tumour. The necessity for the term was sensibly diminished by the labours of Bayle and Laënnec, but for a moment revived under the influence of the doctrines of Broussais. Maintaining that inflammation forms the commencement, the source and origin of all tumours and tumefactions of the breast, as well as of other organs, Broussais and his disciples were naturally led to consider engorgement of the tissues as the fundamental lesion in almost all chronic diseases.

As subacute inflammation was, according to their doctrine, capable, in the long run, of giving rise in some cases to scirrhus, in others to encephaloid disease, or to tubercle or to fibrous growth, or to simple lardaceous transformation of the tissues, it might, without inconvenience, assume the name of engorgement, where it existed unaccompanied by reaction or marked pain. Practitioners of this system of medicine still think that they express something by the aid of the word engorgement.

Having remained contented with their theoretical notions for the last thirty-five years, they have failed to perceive that science has passed beyond their circle, and that no one in the present day would venture to maintain that inflammation is the cause of the tumours and morbid products under discussion. In short, the habit of employing the word *engorgement* arose from ignorance, which pathological anatomy has luckily dissipated, or from error dependent on the love of systematising. At present, it is nothing more than an anachronism destitute of plausible explanation. Does this imply that we ought absolutely to discard the word from surgical language? Certainly not. There are still cases in which the diagnosis is surrounded with so much difficulty, that the maintenance of certain vague expressions is necessary and useful.

Nevertheless, strictly speaking, it is possible to dispense with the word engorgement in treating of diseases of the breast. Of two things one, either chronic swellings of the breast, taken at first for simple hypertrophies, depend on certain tumours, all of which have proper names, or they depend upon some, more or less tedious, subacute, inflammatory process.

In the first case, it is the name of the tumour which we require; the word *engorgement*, substituted for this name, can but mislead the practitioner. In the second case, the generic name — the expression subacute inflammation — having a more precise

signification, should have the preference, the more so, because subacute inflammation, or tumours, may exist in the breast without, strictly speaking, there being either engorgement or swelling. I should dwell less upon a question in itself futile, if, even in our day, the word *engorgement* were not still the source of serious mistakes in the prognosis and treatment of diseases of the breast. To become sensible of the inconvenience attending the employment of this word, it is sufficient to observe that those who make use of it believe in the possibility of curing, without the intervention of surgery, a great number of tumours, which are quite indissoluble in their nature; whilst, on the contrary, other practitioners regard as incurable, lesions easily got rid of without serious operation. How can it be otherwise? If there be in the breast a colloid, melanotic, scirrhous, encephaloid, tubercuious or fibrinous tumour, or a simple subinflammatory thickening, they all acknowledge the same essence in the estimation of the physician, who adopts the word *engorgement*, to designate so many different diseases. Confounding all together, these persons maintain, in perfect good faith, that they can prevent the formation, arrest the development, and often bring about the cure of cancerous tumours: making no distinction in the midst of objects of such opposite natures, they are convinced that they have cured tumours of malignant nature, because they have sometimes succeeded in getting rid of certain subacute inflammatory swellings; and they are thus led to propose, indifferently, for all tumours of the breast, a plan of treatment which applies only to one morbid condition.

Amidst such opposite doctrines, some other practitioner, in like manner relying on the word engorgement, comes to the conclusion that all tumefactions of the breast necessitate the use of the knife or of escharotics, because he sees that other measures fail in cases in which there were genuine heterologous tumours. In short, whoever is familiar with the facts bearing upon this subject, is aware:

1st. That the inflammatory swellings of the breast are almost all curable without operation; either they disappear under a process of pure and simple resolution, or they terminate in suppuration.

2d. That tumours, which are new growths or morbid transformations, on the contrary, hardly ever disappear, except under the employment of surgical measures.

This being premised, there still remain some affections of the

breast, which, perhaps, may be usefully studied under the title of engorgements.

Already, in treating of abscesses, I have said a few words on chronic inflammatory affections of the breast, so far as they terminate in suppuration. I may here add, that in some cases, subacute inflammation proceeds so gently, and is accompanied by such obscure signs of local reaction, that it is questionable whether it should be called inflammation at all, or rather whether it should not be made the subject of a distinct chapter. In this view, there are even several varieties of engorgements. There is an engorgement which we may call essential; an engorgement as an accompaniment or consequence of long-continued suppuration; and an engorgement existing as a complication of mammary tumours, or as a consequence of operations for their destruction. For my own part, I merely imply by the term engorgement, in the following remarks, a lesion characterised by thickening, with a lardaceous condition, and loss of a part of the elasticity, and porous, lamellar structure, and of the extensibility natural to the tissues, together with the absence of any heterologous formation.

A. *Physiological Engorgement.*—Pain or change in the shape and size of the mamma, rarely fails to cause anxiety to patients, however slight it may in reality be. The engorgement about to be considered belongs to this variety. It occurs chiefly in young, and especially in unmarried women, and shows itself at the approach of the menstrual period, and at the commencement of pregnancy, or on the occasion of any uterine disturbance.

In the space of a few days, and sometimes of a few hours, the mamma increases in size, and density, and markedly in sensibility. With this increase in size, there is a greater degree of heat and tenderness than usual: the nipple projects, becomes deeper in colour, and the brown tint of the areola increases in like proportion. In one word, the whole mamma exhibits an excess of tension. This species of engorgement, which I call physiological, because it depends upon the genital and sexual functions, and does not, in fact, deserve the name of disease, almost always disappears at the end of a few days, or even hours. A very fleeting malady, it is rare for it to last longer than a week; but as some patients are, nevertheless, much inconvenienced by its presence, it is well to know how to diminish and get rid of it, by means of topical resolvative or anodyne applications. Cloths dipped in lead

lotion, friction with liniments or ointments containing opiate preparations, belladonna, or henbane, usually overcome it very rapidly; and mucilaginous baths, or camphor in a lavement, and acidulated drinks, are also useful as calments. We should not have recourse to opium, unless the breasts are so tender as to cause loss of sleep. After all, however, it is somewhat rare for patients to require our advice for so trifling a disorder.

B. *Simple Engorgement.*—From various accidents, as blows, falls, and irritations of all kinds, as well as during the progress of pregnancy and suckling, or from irregular menstruation, or other internal cause, a swelling occasionally arises in the breast. This swelling is sometimes limited to a small portion of the organ, sometimes extends over nearly the whole mamma, is sometimes circumscribed, but usually diffused, is indolent, and characterised by its slow progress, without alteration in either the colour or temperature of the skin. The patients are often ignorant of the duration of the disease; and are often mistaken as to its origin and cause. Examination shows that the breast has undergone marked alteration, both in form and volume; but these changes differ according as the tumefaction is circumscribed or diffused.

Partial Engorgement.—When occasioned by violence or some external irritation, simple engorgement of the breast is almost always circumscribed. It then occurs under the form of a sort of nucleus or patch, existing undefinedly, either beneath the integuments, in their structure, or in the tissue of the gland itself. The skin covering it, which sometimes preserves all the characteristics of the healthy condition, is in other instances more or less thickened, and honey-combed. On pressure, we become sensible of a sort of thickening and fusion of the engorged mass with the neighbouring tissues, which is not met with at all in tumours properly so called.

Although circumscribed and limited, engorgement of the breast, nevertheless, becomes gradually lost in a vague indefinite way in the surrounding parts. It is also rare for it to be restricted to a small extent of the organ.

Diffuse Engorgement arises more particularly under the influence of lactation, and of internal causes. Like the circumscribed affection, it is sometimes seated in the gland, and sometimes in the other organic strata of the part.

In this form, it is not uncommon to see it occupy the whole extent of the breast, and include at the same time, the mamma, the cellulo-fatty tissue, and the integuments.

Case I.—*Engorgement scarcely perceptible, following a blow received six months before.*[1]

Case II.—*Engorgement of the left breast, or rather pain, with some thickening.*[2]

Case III.—*Engorgement of the left mamma, from a blow; leeches; poultices; improvement.*—Thiéry, a washerwoman, æt. 32, came into the hospital, on the 17th of March, 1847, stating, that eighteen months before, she had received a blow on the upper and inner part of the left breast. A medical man applied leeches, and afterwards, in consequence of experiencing renewed pain in the neighbourhood of the blow, she rubbed the breast with oil, the nature of which she could not describe. The organ which, on the first examination, appeared to be unaltered, was neither red nor tumid. No tumour could be felt whilst the arm was hanging down at the side; but, when it was raised, a hard mass was perceived at the upper part, and when the superior half of the gland was grasped by the fingers, a hard lump the size of a hazel nut, could be detected near the areola—around, two or three small lumps could be felt, which rolled, and escaped under the fingers, and were irregular on their surface. Thus the case presented the characters of indurated mammary tissue, such as occurs in women who have suffered from abscesses, and in whom some of the lobules are still engorged.

19th.—Twelve leeches were applied to the lower part of the breast, and subsequently a poultice.

21st.—The leeches had not produced any manifest benefit; the patient still felt some shooting pain in the upper part of the mamma, when she raised her arm.

22d.—Less suffering; the lumps in the breast were diminished; and the cure was now only a question of time. The patient was discharged with the following prescription:

Twelve leeches every fortnight to the lower and outer part of the breast, and friction with the iodide of lead ointment, under which measures she got well in six months.

Case IV.—*Blow on the right mamma; tumour imperfectly circumscribed, painful on pressure, and apparently formed by indurated*

[1 The details have been omitted.—Ed.] [2 Ibid.]

lobules of the gland; twelve leeches, which were of service; the patient desired to apply a dozen leeches every month to the indurated points.[1]

Case v.—A young Spanish lady of good constitution, who had resided at Paris for some years, was confined, for the second time, about the middle of 1845. The labour was natural, and at first all seemed to go on well with the mammæ; but the lady, whom particular circumstances prevented nursing, and who in other respects had quite recovered in a couple of months, observed her left breast, at the end of that time, to attain an excessive size without there being anything to account for it. In the space of six weeks, the breast had become three times the size of the other, and had assumed a marked globular or hemispherical shape. Its density increased in the same proportion, without the least pain or alteration in the general health.

When I was called in to examine the breast, I found it firmly attached by a large base to the front of the chest; its colour was grey and brown, inclining somewhat to yellow, and presenting the character of an enormous lardaceous mass. There was no fluctuation, and the irregularities in it were few and of small size; but with attention, I found some thickening, and I noticed that the surface of the breast retained the impression of the fingers. The nipple was half hidden at the base of a sort of excavation, yet there was nothing to make me suspect the disease to be of malignant nature.

The prognosis which I gave was, in fact, reassuring. Twelve leeches were applied below the tumour, which was covered for some days with linseed poultices, sprinkled with Liquor Plumbi. Emollients and alkaline baths were administered alternately every second day; and at the same time, I prescribed iodide of potash internally, and a purgative every morning. At the end of ten days, twelve more leeches were applied, and soap plaster substituted for the other topical applications.

By these means, the breast, which had not been submitted to any treatment previously, soon began to diminish in size and consistence, and to recover its elasticity and mobility. The nipple gradually became disengaged from the sort of capsule, in which it had hitherto been contained, and in less than six weeks the cure was complete.

[1 The details have been omitted.—Ed.]

This species of engorgement is rare, because a degree more of it is apt to terminate the case in suppuration, and a degree less constitutes so mild a disease, that it often disappears of itself, so that the patients pay but little attention to it.

The appropriate treatment for diffuse engorgement of the breast is much the same, as for the circumbscribed variety. There is no necessity, at first, to use very energetic measures, for in itself the disease is hardly susceptible of any very serious consequences, and when left to nature, in a great many persons, it disappears in the course of a few weeks or months. In other cases, it terminates by forming one or more points of suppuration; and in others, again, it continues for an indefinite period, or ends in the formation of tubercular masses. A favorable prognosis, as may be imagined, presupposes that the disease is without serious complication, either in the pulmonary or abdominal organs.

Case vi.—*Chronic engorgement of the left breast, of six weeks' duration, supervening on the cessation of lactation for twenty days; engorgement on the death of the infant, which was the second the patient had had, and endeavoured to suckle; inutility of the iodide of lead; slow, but progressive amelioration under compression; cure almost completed by mercurial friction.*[1]

The treatment of chronic engorgement consists of measures derived from various classes of remedies. What has been remarked relative to bleeding, purgatives, and the employment of resolvents, whether local or general, and of baths, and compression is applicable here. If the patient be neither too delicate nor too much enfeebled, I usually apply ten or fifteen leeches beneath the breast, and a little behind towards the axilla, at intervals of a fortnight, or longer, should the disease be of some standing. At the same time, I employ either poultices, or mercurial or iodide of lead ointments; and once a week, the patient takes Seidlitz powders or castor oil as a purgative. To these measures I add either bran or gelatine baths, made alkaline, by the addition of three or four ounces of carbonate of soda or potash. A mild, though nourishing diet, is recommended at the same time. Should these measures prove insufficient, after a month or two, I commence to give iodide of potash, in doses of fifteen or thirty

[1 The details have been omitted.—Ed.]

grains a day, continuing at the same time the purgatives and the baths. For the previous ointments, I substitute iodide of potash ointment, or soap or hemlock plaster, or the Emplast. de Vigo, all of which topical applications may be advantageously alternated with each other, and under these circumstances appear to me to be of undoubted efficacy. In case these do not succeed, there yet remain two important resources, repeated blistering and compression. A blister large enough to cover the whole extent of the engorgement, and repeated at intervals of a fortnight, forms one of the most powerful resolvatives at our command; and here, as elsewhere, it fulfils two indications. If resolution be still possible, the blister affords every chance of bringing it about; but if, on the contrary, suppuration be inevitable, the blister will certainly hasten it.

As for compression, I should not hesitate to recommend it in preference to everything else, if the situation and form of the breast did not render its application so difficult, fatiguing, and even painful to the patient. Notwithstanding this, it is desirable to have recourse to it, and in tumours of this kind, it has unquestionably achieved signal success, when other measures have either not succeeded or have not been resorted to.

Case vii.—*Chronic engorgement of the left mamma; mammary and submammary abscess about a month previously; compression with strips of plaster, and subsequently with a dry bandage.*[1]

These measures evidently deserve the confidence of practitioners, and may be employed together or alternately, as well as successively. When carried out with prudence, good sense, and skill, this method of treatment, taken as a whole, will hardly encounter any case of simple engorgement which will not eventually yield to it.

Case viii.—*Subinflammatory engorgement of the left breast, consequent on the cessation of suckling; an incision, practised under the erroneous idea of the existence of fluctuation, produced rapid disengorgement without any suppuration; the patient left the hospital, with a small fistula, which discharged milky serum.*[2]

Case ix.—*Considerable chronic engorgement of the right breast, consecutive to submammary abscess of uncertain date; compli-*

[1 The details have been omitted.—Ed.] [2 Ibid.]

cation by inflammation of the axillary glands; cure by local antiphlogistics.[1]

As these engorgements are occasionally only ill-defined low inflammation, the diagnosis may be difficult, especially if they have to be distinguished from subacute purulent inflammation. Errors have been made in this way, and I confess to having myself fallen into them, under two different circumstances. My error, however, proved the origin of a special method of treatment. I refer to punctures made in several places in the engorged mass. The facts are as follow:

Premature Incisions.—Under the impression that an abscess existed at the base of a mamma which had been in an engorged condition for a long period, I determined to plunge a straight bistoury into it; the instrument, however, passed only through solid materials, and no pus came from the wound. As I was apprehensive lest the condition of the patient should be aggravated by what had been done, I was in some anxiety until the succeeding day; but my fears were not of long duration, for twenty-four hours afterwards, I was surprised to find the disease sensibly diminished, instead of increased. I have subsequently resorted to the same practice designedly, in cases of well-marked inflammation in a tumour. A vague or diffused engorgement, occupying a third, a half, or the whole extent of the breast, and accompanied by pain, heat, and a rosy colour of the integument, in a patient of good constitution, will often yield more rapidly and completely to two, three, or four punctures effected simultaneously than to any other known method.

This plan of treatment is not uncommon with me in engorgements in other parts. I have, elsewhere, mentioned the results which have followed it in acute inflammation generally; and I have also employed it successfully in subacute adenitis, and in the treatment of certain varieties of tumours, of chronic swellings, and hypertrophies of all kinds, and, in particular, of the thyroid body.

In the breast we should select those points which appear to form the foci of the disease, and constitute the most irritated portions of the engorgement, and the bistoury should be introduced perpendicularly to considerable depth. As the three or

[1 The details have been omitted.—Ed.]

four punctures are rapidly made, they do not occasion so much pain as might at first be imagined. It is rare that some improvement has not taken place by the following day. The skin gets pale and supple, and the disengorgement of the part becomes perceptible, so that we often see resolution proceeding rapidly.

There is something peculiar in the action of the cutting instrument, which does not seem to me to have been satisfactorily explained, as the evacuation of the fluid, bloody or otherwise, which follows the incisions is usually of too slight importance to account for the good effects of the measure. It is, however, a practice which will never be extensively employed. Patients have too much hesitation in submitting to the knife, even when an abscess has actually formed, for us to expect them to give their assent to it also as a preventive measure, when there is as yet no depot. On the other hand, surgeons fearing lest they should seem to have been mistaken when they pass a knife into an inflamed part, are unwilling to do so when they are convinced that there is no abscess to open.

Still there are some cases in which these *resolvent* or anticipated incisions may be resorted to with much benefit, that is to say, when, without being certain of the fact, there is still room to think that suppuration has taken place in an engorged mass. Reasoning from ordinary data, we usually hesitate, and hold back under such circumstances, fearing to aggravate the disease. Or when aware that the operation may be useful, even when there is no pus, surgeons are more disposed to allow the suppurative process to extend, preferring to run the risk of augmenting the gravity of the disease, with the sole object of forming a positive diagnosis.

A number of other remedies are applicable to engorgements of the breast. Hemlock, baryta, carrot, the houseleek, the solanum, preparations of iron, ammonia, digitalis, arsenic, copper, mercury, gold, quinine, &c., have all been spoken of; but as they are also recommended indifferently in cases of all sorts of tumours, they will be discussed in succeeding chapters.

c. *Hypostatic Engorgement.*—The occurrence of numerous cases in point have convinced me that the mamma often becomes engorged from its own weight and dependent position. This kind of engorgement, which I was the first to point out in my clinical lectures, delivered many years ago, occurs in two principal forms :

1st. In women who have borne children, and whose breasts are both soft, heavy, and pendulous. In such cases, we see the breast become swollen, either in its whole extent, or at the external and inferior part, and exhibit all the signs of well-marked engorgement, without our being able to attribute the morbid process to anything but stasis of the fluids, and the pendent position of the organ.

2d. In women whose breasts are voluminous, without being either soft or pendulous, and especially in stout women, this engorgement occurs in the external and inferior or axillary position, and has seemed to me to depend on the weight of the organ, whereby the large heavy breast continually drags on its roots, so as to fatigue the tissues and interfere with the circulation of the fluid in whatever position the patient may happen to be.

I may add, that the present construction and shape of women's corsets or boddices favours the occurrence of the affection, rather than prevents it; instead of gently raising the mammæ a little to the inner side, or towards the substernal fossa, these vestments spread them out, and push them to the side of the axilla; so that in this latter position the breast is again abandoned to its own weight, at the same time that its root is flattened towards the inner side, where it is dragged upon.

Hypostatic engorgement, which forms the commencement of some cases of positive inflammation, thus has its predisposing or occasional cause in the excess in size and elasticity of the breast itself, or of the tissues by which it is attached to the thorax. Whether it form a part of the normal organization of the woman, or whether it depend upon some accidental condition, an exaggerated size of the breast is met with in females of good constitution as well as in others.

The mechanism of the affection is not a simple matter of curiosity or of useless theory, for it points out the kind of remedy to which we ought to address ourselves, and it shows that the indication to be fulfilled is wholly mechanical; viz. to maintain the mamma in an elevated position, and to prevent any traction on its roots, an indication as simple in itself as it is easy of attainment. A well-made suspensory bandage—a common handkerchief or bandage of any kind—will suffice, provided that it surrounds the engorged and dependent part, and raises it gently upwards towards the inner side.

The stays themselves, constructed in a certain manner, may fill

the place of the best bandages; and for this purpose, it is necessary that the gussets, which are freely cut out in other parts, should be closed altogether, or smaller in size, towards the axilla than towards the sternum, and that the busk should here be considerably narrowed. This simple precaution will often cause the complete disengorgement of the parts in the course of a few days. If, however, the disease be of long standing, it will resist this measure, but there is nothing to prevent our associating with the suspensory bandage such topical applications, either resolvent or sedative, as are useful in other cases of engorgement.

Case x.—*Engorgement of the mammæ; suspensory bandage.*—Danze, æt. 24, of lymphatico-nervous temperament, stated that three weeks ago, from the employment of repeated foot-baths, her menses suddenly ceased, and she was seized with symptoms of congestion of the head. She had fever, headache, dizziness, obscurity of sight, and sickness. These symptoms continued for about twelve days, when the patient took cold, and had an accession of fever, with delirium, for several days.

On the 26th of December, in undressing, she noticed that her left breast was swollen and painful. The patient did not determine upon coming into the hospital until the Friday of the same week. She went to the hospital of La Pitié, in the first instance, but came to La Charité on the Saturday evening.

31st.—On the Sunday morning, her breast was large, tender, sensitive, tense, and dependent, but there was no redness. A bandage was applied so as to suspend but not to compress the breast, and bran mashes were applied.

January 1st, 1844.—The right breast began to increase in size, and soon became larger and more painful than the other, the engorgement being situated at the outer and lower part. There was no redness. The same treatment was continued, but she was ordered to take internally six and a half grains of subnitrate of bismuth. There was increase of fever from four in the afternoon till seven, and, in the first instance, shivering.

2d.—the attendant had forgotten to administer the bismuth.

4th, 5th and 6th.—There was no shivering.

7th.—A large blister was applied to the epigastrium, and with marked benefit.

8th, 9th and 10th.—By degrees the swollen lobules are becoming disengorged.

11th.—The blister had nearly dried up, and there remained only a few enlarged lobules, which were little painful. The patient was discharged.

We are rarely obliged to employ energetic remedies in such cases, and do not remember to have seen a single instance of hypostatic engorgement of the breast terminate unfavorably when treated in the manner just pointed out.

D. *Symptomatic or Consecutive Engorgement.*—Engorgement, accompanying or following suppuration in the mamma, would hardly deserve to be treated of separately, did it not, in some cases, constitute a distinct and separate disease. After prolonged suppuration, the tissues surrounding the pyogenic portion of the breast become harder and thicker, and undergo a sort of lardaceous transformation; so that patients, who have been cured of abscess, retain lumps in the breast, which have often been mistaken for malignant tumours.

The prognosis in such cases is generally favorable, and is similar to that of abscesses of long standing, formerly spoken of. The same observation applies to the treatment. Leeches, at short intervals, to the breast, topical resolvents, compression, blisters, and baths, as external remedies; and calomel, iodide of potassium, and purgatives, as internal ones; in short, all the measures advisable in cases of active engorgement are useful here; the only modifications to be attended to proceed from the presence of the remains of abscesses, fistulæ, or inflammatory swellings, and of all these conditions which have been pointed out in the chapter on abscess, and which it is therefore unnecessary to recapitulate.

Engorgements consequent on abscess of the breast are not, like primary ones, of a kind to be benefited by the puncture spoken of above, except in cases where they are complicated with swellings and nodules of inflammatory nature.

E. *Engorgement accompanying Tumours of the Breast.*—All tumours of the breast may be complicated with engorgement, but it is necessary to guard against error on this subject. Tumours properly so called, and swellings consequent on engorgement of the breast, constitute two pathological conditions, which are absolutely distinct from each other. The presence of a tumour, of innocent or malignant nature, does not necessarily entail the

presence of engorgement of the neighbouring tissues, any more than the existence of engorgement need necessarily lead to the formation of a tumour. Tumours of all kinds, large or small, may exist for a great number of years, without the smallest degree of engorgement. The only positive fact is, that in rather rare cases, the tumour may, in some sense, act like a foreign body, and thus produce around it a certain amount of thickening of the organic structures.

I shall not, however, pause longer on this point, as I shall have to discuss the question relating to this species of engorgement when speaking of tumours of malignant nature. Besides, it does not require any further detail, either in respect to its etiology, diagnosis, prognosis or treatment, than that which has already been bestowed on the other varieties of engorgement described above.

§ 2. TUMOURS PROPERLY SO CALLED.—All tumours of the breast, whether they be of innocent or malignant nature, are susceptible of such variety of forms, that it is convenient to study them group by group, without, however, losing sight of the two great classes about to be pointed out.

A. *Homologous Tumours.*—Innocent tumours of the breast all belong to two principal divisions—the one is formed by solid ingredients or tissues—the other by liquid or pultaceous materials; in other words, they form either concrete tumours or cysts. This latter term, however, must not be taken too literally, for some solid tumours are as much surrounded by a sac, as those collections of fluid which the cysts specially characterise.

1. *Concrete or Solid Tumours.*—These are naturally divisible into several varieties; some, made up of natural structures more or less altered, have to a certain extent the texture and appearances of some of the tissues—in others, on the contrary, we find new products, which is a proof, at any rate, that the disease originated in the exudation of materials from the vascular system under the action of morbid processes.

Hypertrophies, fatty growths, and neuromata, belong to the natural constituents of the mamma, and deserve, in this respect, serious consideration.

a. Tumours by Hypertrophy.—Under the title of hypertrophies, I include only those swellings which are without noticeable change

in the structure of the breast. In hypertrophy, there is a manifest excess in the size of the breast; its meshes, lamellæ, cells, lobules, and in fact each of its elements, has undergone abnormal development, sometimes to an extreme degree, but without being complicated with any disorganization; so that, when placed in conjunction with a slice of the sound tissue, the tumour cannot, at first sight, be distinguished from it. It is in respect of bulk and dimensions, not of structure, that the hypertrophied elements of the breast have undergone change. I insist on this feature the more, as I shall have to return to it in speaking of glandular tumours, which many modern authors, in my opinion erroneously, refer to hypertrophy of some of the lobules of the breast.

Where hypertrophy of the breast has reached certain limits, it is so far removed from the natural condition, and so greatly interferes with the functions of the organ, that it must be admitted into the nosological catalogue as a genuine disease. There are two varieties of it—diffuse or general, and circumscribed or partial hypertrophy.

1st. *Diffuse Hypertrophy.*—We meet with women whose breasts are very voluminous, though not on that account diseased, for it is a condition natural to them, which has undergone no further alteration since the time of puberty.

In true hypertrophy, on the contrary, the breast suffers an increase in dimension, which does not appear to be at all dependent on age. The whole organ, in such cases, swells, either on one or both sides, without the patient at first paying any attention to it, and without its causing suffering or uneasiness, or the least change that can suggest the idea of disease.

Being in other respects in good health, the patient is led to believe that she is merely getting stouter, and does not notice this condition of her breast, which is caused by the disproportional size of the other parts of her body.

It is, moreover, difficult to say exactly where hypertrophy ceases to be natural and becomes morbid. However, when in a woman, who does not increase in other parts of her body, in an adult whose growth has ceased, and who is neither pregnant nor suckling, we observe one or both the mammæ increasing in size, insensibly but markedly and permanently, without the patient appearing to be ill in other respects, we may conclude that she is the subject of hypertrophy of the breast. The mammæ may in this way acquire an enormous size; they have

been called *pendulous breasts, great* (*grosses*) *breasts,* and breasts affected with *elephantiasis,* as well as hypertrophied mammæ.

There are several kinds of hypertrophy. The increase in size may be confined to the fatty element, or to the glandular element, or to the fibro-cellular structure of the organ. I have, at least, seen two of these varieties of hypertrophy. In other instances, the hypertrophy occurs in all these tissues at once. If the fat, the fibrous net work and the gland increase all together, the whole tumour remains hemispherical, as though fixed in front of the chest, and the breast, which seems rather to be raised up than pendulous, becomes firmer, and to a marked extent, more fixed than in the natural state.

At first sight, we think we have before our eyes one of those magnificent busts so often the theme of the admiration of the poets and artists of antiquity. In place, however, of tending to a conical shape, mammæ, in this condition, almost inevitably assume an arched form.

Some years ago, in 1850, I met with a fine example of this variety in a young woman from Beauvais. Tall, well made, and enjoying excellent health, this young woman, who was twenty-two years of age, was brought to me on account of her mammæ, which had more than doubled in size, especially on one side, in the space of eleven months; they were firm, almost immoveably fixed to the thorax, and in other respects perfectly formed. The nipple and the areolar disc were in every respect natural, and it was easily seen that all the tissues of the part had become hypertrophied together—the deep-seated fat, as well as the subcutaneous bed, and the secretory tissue, as well as the fibro-cellular network.

If the glandular tissue alone is affected (and I shall by and bye give a detailed example of it), the breast dragged down by its own weight, elongates, and soon becomes pendulous. The skin covering it gets thinner, and furrowed by large veins, and the tumour ends by in some degree becoming pediculated.

Of whatever kind it may be, general hypertrophy of the breast is not at all a common disease; it has been met with in India, America, Egypt, England, and in Germany, much oftener than in France. Astley Cooper, who has described a few cases, attributes it principally to celibacy, and believes that it occurs most frequently between thirty and thirty-five years of age; but he nevertheless speaks of a young woman, only fifteen years old, whose breast, pyriform and pediculated, measured twenty-three

and a half inches in circumference. M. Chassaignac and Richelot mention another female whose breast, which hung down as far as the knees, weighed thirty pounds. Renoud[1] relates, on the authority of a practitioner in Egypt, M. Etienne, the history of an hypertrophied mamma which hung down as far as the pubis, and was eighteen inches in thickness.

A negress, who menstruated at fourteen years old, and never subsequently, noticed her breasts to acquire an excessive development in the course of two years, without her general health, according to M. Huston,[2] being at all affected. Two years afterwards, one of her breasts became ulcerated, in consequence of a blow, and afterwards gangrenous, and the patient speedily sank. The left breast weighed twenty-six pounds, and was forty-two inches in circumference; the other was thirty-four inches round, and twelve pounds in weight. The tumour was purely hypertrophic and glandular, and contained neither degenerated nor morbid tissue.

Women are not alone subject to hypertrophy of the mamma. Men appear also to have suffered from it on several occasions. M. Pètrequin[3] states that he saw a man at Pavia, whose breast hung down eighteen inches. M. Vidal[4] speaks of it also, and mentions that it was extirpated with success.

The result of the cases hitherto published or collected together by A. Cooper, and by M. Fingerhuth[5] and by myself, shows that hypertrophy of the mamma occurs more frequently at the time of puberty than at any other period of life, although in women who are unmarried we meet with it also at from thirty to forty years of age. I have never observed it before fifteen, nor after forty years.

The following is a case reported by M. Deville, then one of my dressers, which occurred in a young woman of seventeen years:

Case I.—*General glandular hypertrophy of the right breast; marked improvement under compression and the administration of iodine internally.*—Héloise, æt. 17, an artificial-flower-maker, of

[1] 'Archiv. Générales de Médecine,' 1839, vol. iv, p. 377.
[2] 'Journal des Connaissances Médico-Chirurgicales,' vol. ii, p. 89.
[3] 'Anatomie Médico-Chirurgicale,' p. 231.
[4] 'Pathologie Chirurgicale,' p. 810.
[5] 'Gazette Médicale,' 1837, p. 154.

pretty good health, and regular since twelve years of age, has never had any serious malady. She is of lymphatic temperament, and has never been pregnant, although exposed to the chances of becoming so. A year ago, four months after receiving a blow from the elbow of no great violence, which gave only momentary pain, she noticed that the right breast became large, without being either painful or hard; and since then, large veins have shown themselves on its surface. In its whole extent, but especially towards the outer side, it is increased in size. The patient has never received any treatment, but has simply increased the slope of her stays to a corresponding amount.

August 28th, 1844, in the evening.—The right breast much swelled in its whole extent, but especially in its external half, has now a circumference of twenty-one inches at the base, a zone of twelve and a half inches, a length of five and a quarter inches, a space across of six and a half inches, and a depth of about two and a half or three and a half inches. Its consistence is soft, and sown with hard glandular lobules, which, however, are not larger than natural, but are greater in number than on the left side, though not more widely separated from each other. The circumference of the left breast, which is of natural shape and structure, is about fifteen inches, its zone eight inches, and its extent five and a quarter inches. Although the left breast remains firm and well formed, the right is pendulous and rather flask-like. Pressure, occasions no pain, and the patient has never suffered any. The areola on the right side is level with the surface of the tumour, although on the left side it forms a true nipple, of a light brown colour, raised above the rest of the breast for about half an inch. The skin of the breast, unaffected, and without adhesion to the neighbouring parts or marked thinning, is covered by numerous dilated veins, some of which are as large as crow-quills, and one of considerable length is as large as an ordinary quill.

29th.—Fifteen and a half grains of iodide of potassium daily. Compression with amadou.

31st.—Circumference nineteen and a half inches, zone twelve inches. Renewed compression.

September 2d.—The patient has a slight cough, but spits no blood. The apparatus for compression does not annoy her at all.

4th.—The compression was removed, and there was found

marked diminution. Circumference eighteen inches, zone ten and a half inches. The patient desired to go home, but was to continue the same treatment there.

In the early stage this affection does not inspire much alarm; for as it is unaccompanied by pain or general indisposition, it occasions no anxiety, and the only remark it usually draws forth is that the patient's bust is becoming more developed.

Menstruation is usually interfered with in amount and regularity, and occasionally may cease entirely. The voice also alters; it becomes hoarse, and many patients complain of catarrh, or of difficulty in speaking. The breast pretty often increases in size, without losing its firmness, or indeed it may augment somewhat in density. In such cases, it preserves its globular or spheroidal appearance. At the time of puberty, in some women, it acquires an enormous size, without hanging down or being dragged by its weight towards the abdomen. It was shown above that in this consisted the characters of fibro-glandular hypertrophy. However, in general, that is to say in purely mammary hypertrophy, the tumour hangs lower by degrees, so much as occasionally to descend in front of the thighs in a pyriform manner, and to remain attached to the chest merely by a sort of pedicle.

Prognosis.—This disease should never be neglected; besides the deformity which results from it, it sometimes ends by transformation into something dangerous, or in atrophy of the whole body, and derangement of the nutritive functions, and eventually, after some years, in death.

Hypertrophy is usually easily distinguished from all other affections of the mamma. What has been said of it will obviate all risk of its being confounded with what was said above of the different kinds of engorgements. Scirrhus, or lardaceous encephaloid, which has a vague resemblance to it, is distinguished at first sight from it by its hardness, incompressibility, and the wrinkled, furrowed look of the integuments, and by the matting together of all the affected tissues, and the alteration in the nipple, and all the other characters proper to cancer. In short, one symptom will obviate any mistake; and it is that in hypertrophy, except in size, there is no change in the affected organ.

Tumours of different kinds, cysts, deposits, lipomas, &c. occupy merely one spot in the breast, thus forming a distinct body, and from this circumstance alone are deprived of any analogy to

hypertrophy of the breast, the diagnosis of which is thus much facilitated.

The *treatment* of diffuse hypertrophy of the breast still leaves much to be desired, and should be the same as that adapted to hypertrophy in general. Calomel, tartar emetic in minute doses, repeated purgatives, emmenagogues, and all kinds of astringent local applications, have been employed.

Like M. Fingerhuth, M. Huston, A. Cooper, and some of the Indian surgeons, I have several times tried these plans without success; and as the remedies are not devoid of inconveniences to the rest of the organism, I have ended by renouncing them altogether.

I was under the impression that pregnancy might bring about happier results; the condition of the mamma is so mixed up with that of the uterus, that there was room to hope that sexual intercourse and pregnancy might prove a remedy. Unfortunately, in practice, we meet with two difficulties. 1st. All women are not in such circumstances that we can recommend these measures to them. 2d. Women affected with mammary hypertrophy, do not easily become pregnant.

Two cases, under my observation, occurred in married women who never were pregnant. Another one was more fortunate in this respect, but without advantage to the disease.

Although the use of iodine, cod-liver oil, ioduretted oil, hemlock, iodide of potash and iron, would, *a priori*, appear to afford a good chance of success, I made use of them on three different occasions, for a considerable period, without any conclusive results. Notwithstanding this, however, they are still the most rational medicines that we can resort to.

It is well to associate with them alkaline baths, friction with iodide of lead, potash, or mercury, chalybeate or gaseous draughts, laxatives, and much bodily exercise.

Methodical compression, which at first seemed to me to be clearly indicated, either as a principal or an accessory remedy, nevertheless failed in two instances in which I employed it.

In two others, for some weeks the tumours diminished a little under the bandage, but soon regained their original size; and, in fact, I do not know of a single example of mammary hypertrophy cured by compression. I do not positively know what finally became of the young woman whose case has already been related, though she was much benefited at the time.

I also lost sight of patients whom I submitted, for a shorter or longer time, to the ordinary resolvent treatment, without their being cured. The cure of others was only accomplished by means of surgical treatment.

After all, hypertrophy of the mamma is an affection of little frequency in France. I can, up to the present time, only add six others to the two examples which I described in the year 1849. The breast of one of my first patients, æt. 18, was as large as an adult head, without being altered in structure; but the other breast was only half its size. In the second patient, who was forty years old, and a widow with several children, both breasts were at least three times as large as natural, and this increase in size had occurred in a space of twenty months, although the general condition of embonpoint had not augmented, and the mammæ were not the seat of any appreciable degeneration.

These patients neither suffered inconvenience, nor would submit to any treatment. Two of the other patients had been unsuccessfully treated in all sorts of ways, both by my colleagues and myself. A fifth appeared to derive benefit from preparations of iodine, but I lost sight of her before she was really cured.

I have only once extirpated such a breast. The case is as follows:

Case II.—*Hypertrophy of the left breast; extirpation; radical cure.*—Legruin, æt. 43, of good constitution, was admitted into the hospital on the 15th of December, 1852, for a very large tumour of the left breast, which hung down over the chest by a tolerably large pedicle. On raising it up it was found to be pretty heavy. The skin, traversed with veins like net-work, was unchanged in colour, but became violet when exposed for a short time to the air, and was moveable over the gland, which latter structure moved readily over the deep-seated parts. The tumour, formed by the entire mamma, and not merely at the expense of one portion of it, presented irregularities of various consistence. The patient, whose menstruation was habitually regular, had noticed her breast increase in size without her knowing why. She had borne two children, whom she had nursed. She had never experienced pain, but of late had been sensible of a feeling of fatigue; for a month past the size of the tumour had not undergone any sensible increase.

December 21st.—Seltzer water was ordered, with the effect of producing three evacuations.

22d.—The tumour was removed by means of two curved incisions forming an ellipse with its great diameter transverse. There was not so much bleeding as was anticipated, only three ligatures being required. The wound was subsequently closed by fine sutures.

Section of the tumour.—The skin is thinned but unadherent, and the fatty tissue between the tumour and the skin has completely disappeared: on section, the lobules started up through the incision.

The tumour was not formed by a homogeneous tissue, but was divided into several perfectly distinct lobules, connected together by very loose cellular tissue. Each of these lobes was formed of two elements—one projecting on the surface, elastic, grey-coloured and granular, forming little nodules of various sizes; the other having a pearly lustre (*des nuances franchement irisées*), but only by reflected light, the fundamental tint being white.

The hard tissue being very elastic, seemed to retract between the greyish rose-coloured knots. The proportion of these two tissues was not the same in all parts of the growth. In the superficial part of the breast the lobules were very small, and seemed to be surrounded merely with an outline of white tissue; whilst in the deep portion, the lobules were large and scanty, and surrounded by regular borders. On the deep-seated surface there was a mucous bursa distended with serum.

The microscope, as well as the unassisted eye, demonstrated that all the lobules partook of the hypertrophy, and that they all contained glandular cul de sacs.

The patient left the hospital on the 23d of January, a month after the operation, when there were only a few cicatrized spots, which were dressed with onguent de la mère. She was seen a fortnight afterwards perfectly well.

(Case reported by M. Camus, pupil of the hospital).[1]

[1 The case is illustrated by a drawing, representing a section of the tumour, which together with others, has been omitted from this edition. Many English surgeons will be inclined to question, whether the disease here did not rather consist in the development of a distinct tumour behind the true mammary gland, than in simple hypertrophy of the organ. The duration of the complaint, however, being only one year, militates against this supposition; but the details are certainly insufficient to permit of any positive conclusion. In the museum of the Middlesex Hospital, there is a wax model and the preparation of a breast, removed by Mr. Douglas, of Hounslow,

In this instance, the tumour was moveable and pedunculated; the patient earnestly desired its removal, and the operation did not seem to present any danger.

The two enormous breasts, or mammary tumours, which were removed from a woman by M. Bouyer (de Saintes), and the history of which was communicated to the Academy of Medecine in 1852, were, according to all appearance, tumours from hypertrophy.

It is also determined, by the majority of the cases pointed out in the commencement of the article, that the extirpation of such tumours can be resorted to with advantage. Nevertheless, I should not propose the operation except in cases where the tumour is more or less free and pendulous from a sort of root; that is to say, when the hypertrophy depends rather on the glandular tissue than on the other elements of the breast, or when the integuments are pretty loose and sufficiently sound to allow of our preserving so much of them as may be necessary to bring together the edges of the wound.

If the hypertrophy be rather fibro-cellular than glandular, I content myself with general treatment from as early a stage of the disease as possible. If the hypertrophy be not considerable, or if it proceed slowly, and the patient is not very anxious about it, and has not much pain, the wisest course is often not to pursue any treatment at all, but to leave the breast quiet; for it occasionally happens that the hypertrophy ceases to make progress, and ends by becoming reduced to a simple deformity quite compatable with a tolerable state of health and a long life.

2d. *Partial Hypertrophy.*—Partial hypertrophy of the breast has been even less completely investigated than general hypertrophy, and has not, up to the present time, formed the subject of any special treatise.

M. Vidal (vol. v, p. 787), and some microscopists, are the only persons who have of late said anything about it; but they have done so in speaking of a class of tumours, which I shall presently describe, under the name of adenoid, and which I long

which closely resembles M. Velpeau's drawing. It had been growing three years. The mammary gland was spread out in front and to the side of the tumour, which consisted of imperfectly developed glandular tissue, containing a large number of the "culs-de-sac glanduleux," referred to by the author. It had apparently originated in an hypertrophied lobe of the gland tissue—but the milk-tubes could not be traced nto it, and it would have been more satisfactory, if they had been dissected out to their termination, in the case related by M. Velpeau.—Ed.]

ago referred to under the name of fibrinous tumours, the hypertrophic character of which is, at any rate, questionable.

Partial hypertrophy consists, strictly speaking, merely in the increase in size of a part of the breast, of greater or less extent; it forms, in some measure, but a fragment of general hypertrophy, and it gives rise in the breast to a sort of nodule or lump, which is both larger, denser, and less elastic than the other portions of the organ. The tumour, which in some cases is no bigger than a hazel-nut or small egg, may in others attain the dimensions of the fist, and usually grows insensibly, without occasioning any pain.

These tumours do not become adherent to the integuments, and have neither the stony hardness and puckered aspect of scirrhus, nor the globular arched look of encephaloid. Examination clearly shows that the mammary tissue is continuous with them, and that the growth consists of a part of the natural gland, which has undergone serious changes in its size, consistence, and elasticity.

On pressure, the tumour moves readily between the skin and the thoracic parietes; but its mobility, which may thus be considerable, never allows of its rolling about like a foreign body in the substance, or between the different anatomical strata of the breast.

The peculiar character of partial hypertrophy consists almost entirely in the manifest continuity of the tumour with the glandular tissue properly so called. The tumour, in fact, forms an integral part of the breast itself, greater or less in extent, and more or less changed in structure, rather than a new formation developed in the midst of the natural tissues. Hypertrophic are thus easily distinguished from adenoid tumours.

The cause of partial is still more obscure than that of general hypertrophy. I have met with it in women who had long previously suffered from abscess, or simple congestion, or repeated inflammation of the breast. In other cases, it has seemed to depend either on a blow, or on irritation from the stays, or on some external violence; and sometimes, also, it has coincided with difficult, incomplete, or irregular menstruation, occurring more frequently in unmarried than in married women.

These tumours rarely attain a large size, and in this they differ from encephaloid growths, which at first they somewhat resemble. They can only be confounded with cysts having thickened walls,

or with the commencement of colloid, or fibro-plastic tumours, of which, however, they have neither the density nor immobility. Possibly, also, they may be mistaken for indurated lumps, consequent on old subacute inflammation or chronic engorgement, and they are not always easily distinguished from scirrhous induration; but I shall have occasion to recur to these difficulties in treating of the differential diagnosis of cancerous tumours.

As a general rule, partial hypertrophies undergo, in the long run, transformations and changes which frequently cause them to be described under some other name, from their nature being mistaken. In time, their tissue becomes rarefied and hollowed out into vacuities, compartments, and genuine cysts. Many cysts, also, have their origin in a hypertrophic tumour. Two cases of this kind, which occurred at La Charité, and were examined by M. Lebert, after I had dissected them myself, furnished the following results.

M. Lebert observes:

Case III.—*Fibrocystic tumours of the breast.*—"Each of these tumours was about the size of the fist; they were surrounded with fat, and their structure of a dirty white, inclining in parts to grey, was elastic, tolerably firm, but still not dense. To the naked eye, they, at first sight, exhibited the appearance of the fibrous tissue of an hypertrophied breast infiltrated, however, with small cysts, which, on fresh section, and in parts where they were uninjured, looked like vesicles. On being cut into, these cysts resembled bags, with smooth, internal surfaces, like serous surfaces, communicating, at least some of them, by perforated septa, with others in the neighbourhood. The fluid contained in the cysts, which varied in size between a grain of millet-seed and a hazel-nut, was in some transparent and limpid,—in others, viscid, sticky, and yellowish; and in a small number, brown and dark-coloured, like currant-jelly.

"The microscope demonstrated, in the white tissue, in the midst of which were the cysts, fine, tortuous, wavy, distinct fibres, enclosed in a semi-transparent amorphous substance. The fluid with which the cysts were filled was essentially composed of fat, which occurred under the form of patches and large vesicles, some of which enclosed a very small nucleus; and there were also observable molecular granules, partly of a brownish yellow colour, together with numerous crystals of cholesterine.

"In the interior of this mammary tumour were numerous cysts, the largest of which would have contained a hen's egg, and was multilocular, and filled with a perfectly transparent, yellowish, grumous fluid. The envelope of the tumour was formed of hypertrophied cellular tissue, which was vascular, and exhibited nervous filaments, several of which became lost towards the deepest seated parts. This enveloping tissue everywhere sent prolongations between the lobules.

"The proper tissue of the tumour, varying between yellowish-white and reddish-grey, soft in parts, and finely granular in others, did not, on pressure, give exit to any thick juice. Under the microscope were seen many globules, like those of the mammary gland, which in the most fibrous parts were difficult to recognise; and in their interior were found scales like those of the epithelium of the milk-tubes. I could nowhere discover any cancer cells; and it thus appeared to me that this tumour belonged to those which you have described under the name of hypertrophies, and Müller under that of cystosarcoma of the mammæ."

A tumour filled with cysts, which I removed from the breast of a young lady, of Laon, about twenty-five years ago, was a mammary hypertrophy, covered with simple cysts, which were either bloody or serous. In the case of two ladies, in whom I injected the cysts, partial hypertrophy of the breast proved to have been the origin of the disease. In the case of Madame de F—, the tumour contained, in its centre, nearly two table-spoonfuls of greasy serum, and an hypertrophied mass, the size of an egg, formed the basis or root of the sac, the parietes of which were at first thick, and afterwards somewhat thin. The lady whom I operated on ten years ago, has now in the same breast a new tumour, which has all the characters of the first one, that is to say, of partial hypertrophy, without its being possible, as yet, to discover the slightest appearance of cyst or collection.

We meet with these growths, either in the same breast or in the same patient, here in the shape of a cyst, there, as a purely fibrous tumour. In the case of Madame L—, whom I operated on in the year 1850, at the Maison de Santé of Dr. Blanche, there was a fluctuating tumour with a thick, hard, and somewhat narrow base, which was continuous with the mammary tissue; at the same time, a tumour of smaller size, without fluctuation, was

observed to be connected above with the primary one, by a sort of bridle or bridge. A similar solid tumour, also of innocent nature, had been removed from the patient some years before, by M. Laugier.

My observations on this subject lead me, therefore, to the conclusion, that many cysts in the breast, are, at first, nothing else than tumours caused by partial hypertrophy of the glandular tissues.

It must be understood, that in partial hypertrophy, the morbid changes may occur, as also in general hypertrophy, more particularly in the *acini*, or in the milk-tubes, or in the fibro-cellular element. The question may also be asked, whether the little vacuities, the numerous cysts, which I have several times met with in hypertrophic tumours, and of which Mr. Birkett[1] has given some good examples, were not, in some cases, simply ampullæ, morbid dilatations of the milk-tubes.

The prognosis of partial hypertrophy is by no means serious. The life of the patient is in no degree jeopardised, and as regards the general health, it may be considered rather a deformity than a genuine disease. As the growth never proceeds to a great extent, it is usually compatible with a long life and excellent health.

However, it is not often that these tumours can be left to themselves. Patients become so anxious and uneasy about them, that the surgeon is often obliged to interfere; and, it must also be admitted, that occasionally they do produce marked deformity, and are troublesome enough to justify the anxiety of the patient and the solicitude of the surgeon.

In the solid condition, partial hypertrophy of the mamma should be attacked with resolvent applications, which, when judiciously applied, often succeed in the course of a few months. Iodide of potassium, starch, or iron, and cod-liver oil, associated with purgative and alkaline baths, ointments of iodide of lead, potash, or mercury, soap or hemlock plaster, and the emp. de Vigo, as topical applications, are more successful than in the case of tumours, from general hypertrophy; well-applied pressure is also useful, and affords some hope of a successful result. Another application that may be usefully conjoined with the preceding, is a blister to cover the whole affected part, and to be repeated at intervals of some weeks.

If the tumour be complicated with cysts, and these are of a certain size, resolution is hardly possible, and we should pain-

[1] Op. cit. pp. 67, 108.

fully deceive ourselves, if we anticipated such a termination of the disease. Nevertheless, we may employ colliquative remedies internally, ointments and plasters externally, and even blisters; in all cases, however, avoiding compression, which would rather be hurtful than useful.

When the hypertrophy is combined with the existence of cysts in the mamma, the treatment must be altogether surgical, which gives us the choice of three different operations. When the cyst is of tolerable size, and has not very thick walls, the injection of iodine will be sufficient to cure it. A seton passed through the tumour, or laying the whole sac open by the knife, and causing it to suppurate, like an abscess, will answer the same purpose.

If the cysts be numerous, and of small size, although the solid portion of the tumour may have remained unaffected, it is better to practise extirpation. The injection of iodine into a mammary cyst, being, however, a powerful resolvent measure, should be preferred to any other treatment, without there be some special contra-indication; for after curing the cyst, it sometimes succeeds in causing the gradual disappearance of the engorgement, and the hypertrophy which accompanies or has preceded it.

The other external and internal measures of treatment are quite compatible with the iodine injections.

When extirpation has been determined on, we ought to bear in mind that hypertrophic tumours of the breast are usually imperfectly circumscribed, and that it is necessary to remove a part of the healthy tissues with the diseased ones, though this rule is not of such importance as in cases of malignant or cancerous disease. We ought also to be aware of the fact, that portions of the hypertrophied tissues remaining in the neighbourhood of the wound are by no means insuperable obstacles to the perfect recovery of the patient.

The observations made above, and those which will follow in another chapter on cysts in general, and on the treatment of cysts with thick walls in particular, are so exactly applicable to the tumours under discussion, that it would be superfluous to repeat them here.

§ 3. LIPOMA, FATTY TUMOUR.—We should be wrong in supposing that the hypertrophy of the adipose tissue, spoken of in

the preceding chapter, is the same as lipoma, or that lipoma is only a variety, or species of hypertrophy of the fatty tissue of the breast. The fatty tumours, which I have met with in the mamma, had exactly the same characters as fatty tumours in all other parts of the body; they are formed by lobulated masses of fat, of fat-cells, isolated and distinct from all the surrounding tissues; and in the women who were affected with them, the remainder of the fat layer did not present the slightest appearance of hypertrophy.

Although fatty tumours in the breast are so uncommon, that up to the present time their existence has scarcely been mentioned, the disease is interesting in a clinical point of view. The diagnosis is occasionally very difficult, for in some instances their softness leads to their being confounded with cysts, whilst in others they suggest the notion of a glandular, a fibrous, or an encephaloid tumour.

Attention and experience, however, generally suffice to guard against these errors. A subcutaneous fatty tumour forms a greater projection than a cyst of equal size. The lumps composing it are softer, less tense, and covered by a more natural kind of skin than a true cyst. In the substance of the tissues it may acquire a great size before becoming recognisable externally, and we scarcely encounter any trace of genuine fluctuation in it; it is a mass consisting of a flabby lump, which rarely bears any resemblance to a cyst, or to a tumour of any other species. A mistake, however, is possible, especially when the attention of the surgeon is not awakened to these facts; and I do not hesitate to confess that I was myself deceived in two cases of the kind.

Case 1.—*Fatty tumour of the left breast; extirpation; cure.*—Barois, æt. 42, a married sempstress, came into the hospital on the 3d of September, 1839, for a tumour in the left breast. Thirteen years ago, the patient experienced slight pain in the neighbourhood of the part, without her being able to attribute it to any cause. About the same time she fell from a horse, and a man, in trying to save her, violently bruised her breast. The pain was acute at the time, but the next day it had disappeared. Six months subsequently, in undressing, she felt two large glands like small filberts, about an inch below the nipple. Since then she has paid no attention to them, but thinks that she recollects experiencing slight pain from time to time. Three or four months

afterwards, she observed that others had formed around the nipple, so that the nipple lay as it were concealed in the midst of a crescent of them. She had never suckled, but noticed that after every confinement, of which she has had five, the tumours increased; and that, especially after the last one, they had become more sensitive to pressure. Dull pain, which the patient compared to a cold wind upon a fresh wound, and repeated shootings, had occasioned her some alarm during the past winter.

The left mamma is as large as the two fists, and very irregularly nodulated. The right is but slightly developed. There are six nodules or distinct tumours in the left, each of which is as large as a duck's egg; some are harder, and some, which are softer, encroach on the nipple. All are fixed, and the skin covering them is red, and, near the nipple, thickened. Altogether the tumour is six inches long by four broad. It inclines somewhat towards the clavicle, and is not sensitive on pressure, and some portions of it seem to be fibrous. Chicory ptisan, and seidlitz water were ordered.

On the 7th, an operation was performed, with the object of removing the whole of the diseased and thickened skin, together with the tumour. Five arteries were tied, but there was little bleeding. The lips of the wound were kept in contact by strips of diachylon, and it was dressed with lint spread with ointment.

Examination showed that the tumour was composed of lobules of fat heaped up one over the other; the mammary gland was no longer to be recognised, but below there were some traces of fibrous tissue between the fat-lobules. The diagnosis had been that the tumour was either *butyrous, encephaloid,* or *fibrous.*

The case did well, and by the end of the month the patient had quite recovered.

Before the operation, I had expressed the opinion that the tumour contained so many various structures, that it was difficult to refer it to any distinct species. Some of the lumps of fat also were degenerated, and in a condition of marked decomposition; but the idea of a *fatty tumour* being the essence of the disease, never entered my head.

In another case the error was less excusable, for the nature of the tumour had been the object of recent discussion at the bedside of the patient; it had been frequently examined, and the question of its being fat had been entertained.

Case II.—*Subcutaneous fatty tumour of the breast mistaken for a cyst.*—A woman, æt. 30, of good general health, moderate stoutness, and good constitution, and never having had any family, presented herself at the hospital, in 1845, for a tumour of the mamma.

The tumour, as large as a hen's egg, was situated at the lower and outer part of the areola, and had existed for several years. Slightly prominent on the exterior, it neither occasioned suffering, nor was accompanied by engorgement, or any change in the integuments or other tissues of the part. Elastic, soft, and slightly lumpy, it was not referable to any of the solid tumours of the breast, and was evidently situated between the glandular tissue and the tegumentary envelope. Resting on the mammary gland itself, it yielded to pressure, so as to give rise to doubts as to the nature of the elements composing it. It had arisen insensibly, without evident cause. The patient could not indicate the precise date of its appearance, but positively stated that during the last six months the tumour had undergone a marked increase in size, and that occasionally it was so painful, as to occasion her much uneasiness. After subjecting it to all kinds of examination, I came to the conclusion that the case was one of a cyst containing fluid, in which I thought I positively felt fluctuation, and that a simple puncture, followed by injection of iodine, would suffice to cure it. As, however, it was uncertain whether the cyst contained clear or bloody serum, or gelatinous glairy fluid, it was determined to commence the operation as if for the injection of iodine, that is to say, by puncture with a trocar; but that if, instead of fluid, the tumour consisted of something else, that everything should be prepared to proceed, if necessary, at once to incision or to extirpation.

The patient, accordingly, being very anxious for the operation, was prepared as if for extirpation, and a trocar was passed into the tumour, previously made tense, with the left hand. Finding that the point of the instrument moved freely in the tumour, I was more certain than ever that it was a cyst, but was much surprised that nothing came out of the canula when the stylet was withdrawn. I therefore examined to see whether there might not be some grumous or flocculent matter preventing the exit of the fluid, and accordingly introduced a stylet to the bottom of the supposed cyst, without meeting with any obstacle. I turned it from side to side in all directions, but nothing flowed away; and at this time I less than ever supposed that the trocar had passed

into a fatty tumour. I thought there might be a sebaceous or hæmatic cyst, and at once proceeded to a more complete operation. The skin was divided over the whole extent of the tumour, which was soon exposed, and then exhibited all the characters of a fatty mass, simple, soft, and composed of three principal lumps, which were extirpated. Several vessels were tied, and the lips of the wound being together, the patient rapidly recovered.

Fatty tumours in the breast seldom attain a large size, and as they are rare, it is as yet difficult to give a complete account of them. In the substance of the breast they are susceptible of a transformation or modification, which tends to make them assume the characters of the mammary tissue itself. In almost all situations of the body, tumours are, to a certain extent, influenced by the organs in which they are situated, and become modified so as to take on somewhat the characters and structure of the surrounding tissues. In two or three different instances, and especially in the case of the woman who was the subject of the last case but one, the fatty tumour exhibited a fibrous stroma of considerable density, and throughout its structure to a certain extent presented the consistence of an adenoid tumour.

As lipomas are of innocent nature, they do not of themselves lead to any serious danger, so that women affected with them may neglect all treatment, and discard all anxiety. Nevertheless, as patients never can lay aside all uneasiness when they have a tumour in the breast, the size of which may increase indefinitely, it is rare that the practitioner is permitted to remain a quiet spectator; and as eventually they may undergo some transformation, and at the same time spoil the shape of the chest, fatty tumours ought always to be interfered with, if the patient desire it. Even were it proved, and no one as yet has done so, that iodine and its compounds, taken internally or applied to the skin, or that constitutional treatment of any kind, were capable of bringing about their resolution, I could not recommend their employment, since such treatment undoubtedly exposes the whole economy to serious disturbance.

I am not acquainted with any topical remedy, although numbers have been proposed, that can positively cure a fatty tumour. Iodine ointment, soap and other plasters, applied to such tumours, have never proved of the slightest use. Where there has been a

successful result, it has been attained by means of caustics, under the name of ointments or resolvent liquids.

Some cases have been related, and I have seen patients in whom it appeared that ointments, and solutions having vinegar for their basis, were not altogether incapable, if not of curing, at any rate of alleviating and arresting fatty tumours in the process of development. I may add, that as fatty tumours may undoubtedly disappear spontaneously in other parts of the body, in consequence of some great organic disturbance, the same possibility exists in the case of lipoma of the breast.

Extirpation, it thus appears, is the only efficient remedy in the case of lipoma of the breast. I lay aside the ligature and escharotics, both of which have been rejected for special reasons, in the treatment of fatty tumours of the breast. If extirpation were attended with danger, it would be more prudent to put up with the disease; but, in reality, there is nothing less serious than such an operation. When the tumour is of small size, it is one of the simplest and easiest proceedings in surgery. When, however, the case is one of deep-seated or extensive lipoma, the breast may in the end be so much interfered with, that the operation becomes more serious, and may even lead to dangerous results.

These two observations will suffice, it seems to me, to show that the practitioner should not hesitate, but that the indications for the operation are plain and precise. The only exception is, in the case of small or moderate-sized tumours, which have long remained stationary, or which occur either in persons advanced in life, or in valetudinarians, or delicate women; on the eve, also, of the critical periods of life, such tumours should perhaps not be interfered with, for it has occasionally occurred that after the cessation of menstruation, the most obstinate tumours of the breast have ceased to increase, and becoming atrophied, have eventually completely disappeared.

§ 4. TUMOURS DEPENDENT UPON ALTERATIONS IN THE MAMMARY TISSUE.—We meet in the breast with tumours evidently formed by the glandular tissue, and which contain nothing that can be compared to the structure of cancerous growths.

These glandular tumours, to the diagnosis of which I shall have occasion to return in speaking of adenoid growths and of cancer, present several varieties, which are fundamentally perhaps

but different degrees of each other, forming at their commencement merely varieties of partial hypertrophy. At times small and numerous, they simulate simple nodosities; occasionally they attain a pretty large size, and sufficient mobility to suggest the idea of their being distinct hypertrophic tumours, represented by one or more lobes of the breast, which have become either harder or larger than natural; and finally, they are some of them so small and so little evident, that we are led to question whether they have any real existence, and whether the symptoms attributed to them do not depend on simple neuralgia.

A. *Simple Induration of the Mamma.*—Induration, without degeneration of the breast, has appeared to me to occur in two forms,—the one with, the other without, tumefaction or notable swelling,—the one subacute, the other essentially chronic.

1. *Induration with subacute Swelling.*—The kind of mammary induration here referred to, differs from the engorgement spoken of above, in the circumstance that all the tissues surrounding the diseased part of the gland preserve their suppleness, and the other characters which attend the normal condition. Women thus affected complain of dull rather than lancinating pain, and of some heat and heaviness in the part. Although more voluminous than that of the opposite side, the breast is not sensibly altered in shape. On examination, we find that a portion of its mass is thickened, and slightly indurated, but still retains considerable elasticity, some suppleness, and all its natural mobility; and that although in some one part or other, which is uneven, irregular, and lumpy, a tumour is easily discoverable, it is yet almost impossible to define the exact limits between the lobules which are diseased, and those which are not so. In other words, the indurated part is continuous with the natural tissue so insensibly that it is impossible exactly to say either where the disease commences, or where it ends.

Even on pressure this species of tumour is only slightly painful: it is not by heightened sensibility that it is distinguished from the healthy lobules of the breast. All parts of the gland may be affected in this way, although the disease seems to have a certain predilection for the external and inferior part of the organ. Subacute induration of the breast recognises much the same causes, and is developed under much the same conditions as the glandular engorgement spoken of in a preceding chapter.

Thus, it more particularly occurs shortly after puberty, on the approach of the menstrual periods, some years before the critical period of life, or on the occasion of some disturbance in the uterine functions. There is nothing determinate in the course of the disease; its progress is sometimes so rapid that everything may be restored to the healthy condition, at the expiration of from ten to twenty days. In other cases, on the contrary, if appropriate treatment be not adopted, a chronic condition succeeds the acute; the induration increases whilst the swelling diminishes, and a state arises, the duration of which no longer has any definite limit. However, in neither case is it common for the tumour to acquire a considerable size, and become absolutely isolated in the substance of the breast, and the subject of serious transformations.

When left to themselves, or wrongly treated, we may ask whether such tumours are capable of assuming the characters of malignant growths, and of undergoing cancerous transformation. All experience authorises me to reply in the negative; but as it will be necessary to discuss this question again, I shall not enter into it at present.

The treatment of induration with swelling of the breast is necessarily complicated. If menstruation be difficult or irregular, we must remedy it by appropriate treatment. If, for example, there be chlorosis, or anæmia, preparations of iron should be administered; and in the case of plethora, the assistance of bloodletting should especially be invoked, at the same time that we have recourse to evacuants and purgatives, should the digestive organs be disturbed. When the menses are scanty, especially about the approach of the critical period, we may probably derive benefit by the application, from time to time, of a few leeches to the vulva.

Baths, which are almost always indicated, should be rendered emollient, mucilaginous, alkaline, or aromatic, according as the skin appears to require softening, or exciting.

Under the head of local applications, it is desirable to apply leeches beneath the breast, as was pointed out in the treatment of engorgements, and then to employ linseed poultices, either simple or sprinkled with Goulard water or sal ammoniac, and, at a later stage, poultices of rice and carrot. Still later, we should make use of mercurial and iodine ointments, especially when the case is one of pure and simple engorgement. It is rare, in short,

for the disease, under this form, to prove obstinate; or not to disappear in the course of a fortnight or of a month. In other respects it bears so great an analogy to engorgement, properly so called, that it is quite useless to treat of it now at greater length.

11. *Chronic Induration.*—In the year 1838,[1] under the title of "*Induration en masses,*" I described a disease which had hitherto been confounded with tumours of entirely different nature. This affection, the diagnosis of which, even at the bedside of the patient, is difficult, is characterised, like the preceding, which indeed occasionally forms its commencement or primary stage, by manifest induration of a part or of the whole of the gland. In general, we can only appreciate or determine the reality of its existence by comparing the sound with the diseased breast, and by the inequality which exists in the density of the various lobes of the gland. Occasionally accompanied by lancinating, deep-seated, and dull pain, it comes on by slow and insensible degrees; the gland appears lumpy, without manifest increase in size, and there is no indication of its being the seat of the least engorgement or inflammation. If, however, we successively compress the different lobules, directly against the chest, or, drawing them from the thorax, manipulate them from side to side, we eventually perceive that some are manifestly harder and more irregular than others. Still these characters are not sufficiently well marked to obviate all difficulty in the diagnosis, the more so that in the natural condition the lobules of the breast are far from always presenting a uniform shape and density.

Women are most liable to this kind of mammary induration, without swelling, from the age of twenty-five to forty; but I have also met with it at both extremes of the menstrual period. Its causes are difficult to trace. Celibacy, and the disturbance of menstruation and of the uterine functions, have seemed to me its regular associates; and I have seen it arise insensibly in cases in which the nipple and areola have long been the seat of eczematous or porriginous eruptions.

This affection, which at first it is quite possible to mistake for scirrhous degeneration, deserves every attention. Abandoned to itself, it often disperses without leaving any trace of its existence. It has not been made clear to me, that it ever terminates in the establishment of a scirrhous or encephaloid tumour; nevertheless,

[1] 'Dictionnaire de Médecine.' Art. Mamelle.

I am not positive that such an occurrence is impossible; the diagnosis, then, must be made with extreme caution.

Contrary to scirrhous, the tumour, from the first, occupies one or more portions of the whole gland. Instead of forming, in the first instance, a small mass, which gradually encroaches on the surrounding parts, like scirrhous and the other malignant tumours, the induration here referred to progresses, in some sense, by masses, and by fits and starts, so as often to involve a large part of the gland simultaneously. When scirrhus is voluminous, it forms a tumour, or is complicated by changes either in the skin or nipple; when, indeed, it does not form a marked projection on the surface. Induration, on the contrary, may involve a large portion of the gland without the breast being increased in size, or the integuments and other constituents of the mammary region undergoing any appreciable alteration.

It may be cured by simple measures, which are wholly powerless in the case of malignant tumours. Setting aside those indications which appertain to the state of the uterine functions and the general health, we may at first have recourse to camphorated spirit lotions, or to a solution of the acetate of ammonia. Compresses dipped in Goulard water, and poultices, are also useful; opiate ointments, and soothing balsams and liniments of belladonna almost always succeed, even when the disease is of long standing. Leeches, around or below the breast, are indicated and necessary when the patient is neither anæmic nor enfeebled by age or disease. Nor should purgatives and baths be neglected. I have not found any benefit from the internal use of the iodide of potash and other deobstruents; nor from the majority of iodine and mercurial ointments externally. Compression, which the absence of swelling would seem to render useless, if not injurious, has nevertheless been of service in the case of patients whom nothing else could cure. Under its employment, the gland has gradually become soft, and in a short time regained much of its natural suppleness.

Is it sometimes necessary, or is it commonly useful, to extirpate these tumours? It has already been shown, when describing their prognosis, that according to all appearance, the benign induration of the mamma has no tendency to degenerate into a malignant tumour; in my opinion, therefore, an operation is by no means indispensable in such cases. Even further, if the induration had resisted all treatment, so that we might reasonably fear its degeneration; still extirpation would not appear to me to

be always advisable. The disease having, in fact, no precise limits, requires us to remove an enormous quantity of tissue, even should it involve but a limited part of the gland, without which we are in danger of only incompletely destroying it.

It becomes, therefore, a matter of great practical importance not to confound this kind of induration with scirrhus: the one almost always gets well without operation, and very rarely gives rise to serious consequences; whilst the other can only be effectively treated by cutting instruments or escharotics. In the one case there is every cause to reassure the friends of the patient; in the other, on the contrary, we can only pronounce the most serious prognosis.[1]

B. *Neuromatous Tumours and Nodosities.*—Another variety of induration or tumour of the breast, unconnected with malignancy, is met with in the shape of nodosities or granulations; sometimes single, but often multiple, these granules and little tumours are usually disseminated over the circumference of the gland, especially towards the axilla, and under the edge of the great pectoral muscle.

The question may be asked: whether those, which Astley Cooper and M. Rufz met with, in the substance of the breast, belong to the same species? In the patient operated on by

[1 Mr. Birkett, in a paper published in the 'Association Medical Journal,' for 1853, enters at some length into the microscopical characters of a breast affected either partially or wholly with this species of induration.

The chief point of the communication appears to be, that whereas a perfectly quiescent healthy breast exhibits only in the slightest possible degree, the essentials of a secreting organ, when in this condition it will be found to have undergone marked alteration. "When examined," says Mr. Birkett, "with the assistance of the microscope, the fibre-element of the organ does not exhibit any appreciable change. I mean to imply by 'fibre-element' the areolar or uniting tissue. The secreting portion of the gland-tissue, on the contrary, offers most striking deviations from a healthy condition. The acini, which are remarkably distinct and rigid, clearly exhibit, when torn up, the cæcal terminations of the ducts, closed packed together and opaque. Dilute acetic acid, being added to the preparation, often renders the observation of the object more satisfactory. These cæcal terminations of the ducts are crowded with epithelial cells, and they appear to be filled almost, if we may so say, to bursting point. Such then may be the morbid state of the gland-tissue of the entire breast, or of one or more of its lobes. The abnormal condition seems to depend upon an excited action in the terminal cæci, inducing an excessive production of epithelium, which does not escape by the ducts. I have never been able to satisfy myself, from ocular demonstration, of the existence of any disease in the areolar tissue, but I think that further observation may prove that there is."—Ed.]

M. Rufz,[1] the dissection showed that there was no distinct tumour in the breast. In some patients, however, who complained of tolerably severe pain, I have met with little ill-circumscribed nodules, which seemed to form portions of the lobes of the gland, and were seated in the substance of the mamma.

As, however, I never operated on these patients, and never saw the disease terminate fatally, I have had no opportunity of determining anatomically whether they are really caused by distinct tumours, or by simple natural swellings of the gland more or less indurated.

Case I.—*Lobular induration, with pain in the left breast, of ten years' duration, in a hypochondriac, who referred its origin to a contusion.*—On the 19th of July, 1837, a workwoman, of the name of Smith, 23 years old, of nervous constitution, and somewhat hypochondriacal, who was subject to frequent maladies, and complained of pain over nearly the whole extent of her body, was admitted into the hospital. During the seven years she had been in France, her condition had not appeared to improve; and for the last two years there had been irregularity in the uterine functions, the menses appearing twice a month, especially during the summer. During the preceding May, an abscess, the size of an egg, formed in the vulva, and from that time, her pain had been accompanied by leucorrhœa. Nothing was discovered by examination with the finger. Towards the end of June, she had an attack of scarlatina, which lasted eight or nine days; and during which the evacuations were accompanied by blood. As before stated, she applied at the hospital on the 19th of July, 1837, for a pain beneath the left breast of ten years' duration. About that time, a person stepped upon her chest, causing her much pain, to which she attributed her sufferings. The breast was unchanged in colour, and seemed to be in its natural condition; but towards the nipple, there were some hard, irregular lumps, of small size, which suggested the idea of little engorged glands. There was nothing to lead to the suspicion of their being tumours appertaining to degeneration of tissue.

Prescription.—A bath, and friction, with a liniment composed of four ounces of oil, four drachms of laudanum, and two drachms of extract of belladonna.

July 26th.—The patient was tolerably well, and her moral con-

[1] 'Archives Générales de Médecine,' 1813, vol. iii, p. 79.

dition had somewhat improved; and as the disease required no surgical treatment she went home.

As for the little nodosities themselves, further observations and researches are necessary, in order to determine their nature. The few opportunities I have had of extirpating them, lead me to believe that, as regards the tissues in which they are seated, these little tumours have nothing constant in their character: and in accordance with the result of bedside observation, the scalpel proved to me, in one case, that they are, at least occasionally, small glandular, hypertrophied, and lardaceous granules. I found the dense, elastic, reticular structure of the mamma rendered more homogeneous and harder, by a morbid process, which in other respects it was difficult to characterise. The section, which was lightish yellow, dotted with white, differed from scirrhus in the circumstance that pressure extracted no liquid or creamy juice. On another occasion, however, the centre of the little tumour, which was continuous at its two extremities, with the rest of the mamma, was somewhat softened, like a diseased lymphatic gland.

In two other patients, the tumour, which in one was as large as a pea, and in the other as large as a bean, was isolated in the subcutaneous bed, and destitute of all manifest continuity with the glandular tissue.

In these two cases, the morbid tissue was still more homogeneous, of a deeper yellow colour, but of much less elasticity than in the two spoken of before. One of them was situated on the side of the axilla, the other at some distance from the nipple; and I can give no more exact idea of them than to compare them to small subcutaneous neuromata.

I asked myself the question, on that occasion, whether these mammary nodosities are not, in fact, in some cases, true neuromata; whilst, in other cases, they belong either to the glandular tissue, or to little lymphatic glands which have hitherto escaped discovery.

Whatever they be, these tumours are indicated more by the pain to which they give rise than by their size; they rarely acquire the dimensions of a hazel nut; usually their size and shape is that of a lentil, a pea, a grain of hemp seed, or a bean. In most instances, situated beneath the skin, they nevertheless sometimes occupy the neighbourhood of the deep structures of the breast. Women affected with them complain of sharp, lancinating pains,

which sometimes radiate in all directions. Their sufferings, which are somewhat neuralgic in character, occur by exacerbations at different times of the day or night, and generally arise spontaneously. The slightest pressure or touch in most cases sensibly exasperates them. There is this peculiarity, however, that in some instances, far from being increased at the time of the pressure, the pain seems, on the contrary, to be mitigated, but returns with greater intensity some time afterwards. Patients are thus tormented to such a degree that they lose their sleep, dare not raise their arm, dread the slightest touch, and even the contact of their clothes. In other respects, there is no change in the aspect of the breast, and the general health seems quite unaffected by the disease. It may be added, however, that the pains are so acute, or so enervating, especially in sensitive or timid women, that there sometimes results, in the long run, a marked loss of flesh, and deterioration in the digestive and nervous functions.

I have seen these lumps in the breasts of young girls, or in women of from eighteen to twenty-five or thirty years old, but have met with them much more frequently near to the critical period of life. M. Rufz, who seems to have collected a dozen of these cases since I pointed them out, observes that some of his patients were aged respectively—one seventeen, another thirty-three, and another forty-eight years; whence it follows that such tumours are possible at all periods of life. M. Rufz, like myself, also noticed that their duration is indefinite, and that they may exist for ten, fifteen, or twenty years, without seriously affecting the general health. Whether they are connected with irregularities in menstruation or other disturbance to the uterine functions or not, it must be admitted that their exciting cause is still little understood. I have known patients attribute them to a blow, or bruise, or irritation, either from their dress, or from some external violence; but such an exciting cause is so frequently wanting, in some cases, and attended with so much uncertainty in others, that I do not consider it deserving of much consideration.

The prognosis of nodosities and neuromatous tumours in the breast is not serious. Experience enables me to affirm that they are incapable of any kind of degeneration or malignant transformation, excepting in some few cases, which must be very rare. The pain attendant on them, generally severe enough to plague and disquiet the patient, is occasionally, however, very trifling, and in some instances almost nothing; so that some patients

hardly complain at all, and refuse to accord the least attention to them. I have satisfied myself, that after the menstrual period of life, they diminish gradually, and often end by becoming atrophied. At any rate, even if they retain their original size and physical characters, they cease to be painful; we may say of them that they waste away in time, and that patience and resignation will suffice for their cure.

Nevertheless, nodosities of the breast sometimes occasion too much suffering for us not to submit them to some kind of treatment. The measures recommended for this purpose are as numerous as they are varied. All the drugs useful in neuralgia —preparations of opium, belladonna, henbane, hemlock, bismuth, zinc, antispasmodics of all kinds, oils, liniments, ointments, narcotic applications, and mucilaginous baths—have frequently been tried, and almost always in vain.

Unless the pains are severe, I limit myself to calming the inquietude of the patient. If she be really suffering and anxious, I try successively different topical applications, such as belladonna, henbane, carrot poultices, and compresses steeped in Goulard water. Oils, and opiated or camphorated ointments, sometimes succeed better than anything else as palliative remedies. Soap plaster, I have found useful in some obstinate cases; and gelatinous and sulphur baths are advisable at the same time. It is scarcely necessary to say, that if there be derangement in any of the important functions of life, it must be attended to before everything else. A small number of leeches applied every eight or ten days, during some months, beneath the breast, constitute a valuable resource in women who are neither nervous, nor anæmic, nor lymphatic.

Without either accepting or rejecting the doctrine of M. Valleix, respecting neuralgia, or giving greater weight than they deserve to the observations of M. Rufz, I do not the less recommend the employment of small blisters over these tumours, when they are painful, and when more simple remedies have proved ineffectual. In such circumstances, blisters have appeared to me to be useful in three different ways. 1st. In consequence of their removing the cutis, they allow of the application, each day, at the focus of suffering, of the salts of morphia, and thus enable us, for the moment at least, to moderate the intensity of the pain. 2d. They constitute a powerful resolvent agent, which may affect the tumours themselves, and bring about their disappearance.

3d. Finally, they produce a revulsion which, when repeated a certain number of times, may diminish, tire out, and get rid of the pain.

It would be an error, however, to suppose that blisters are always successful in these small tumours. The greater number, on the contrary, resist them, as they do every other simple remedy, and there is thus no other resource remaining, than to neglect all treatment, and trust to time, or to make use of the knife. I say nothing of caustics, as no reasonable man would think of preferring them. Some patients suffer so much that they are the first to desire an operation, however serious it may be. Although I usually refuse to satisfy them in this particular, I have, in some instances, acceded to their requests. In itself, the operation is extremely simple, being reduced to a small incision, and really does not expose the patient to any danger. In no case, however, do I decide upon it, except the disease be of long standing, and has resisted the different topical applications mentioned above. It is necessary, also, that the tumour be isolated, moveable, tangible, and single; or if there are several in existence at the same time, they must all be removed at the same sitting.

Case II.—Madame P——, whom I saw, in conjunction with my colleague, Professor Rostan, at the Maison de Santé, on the Boulevard Montparnasse, for several years experienced such violent attacks of pain in the right breast, that she had almost daily convulsions, or a species of epileptic attack. After having tried all remedies in vain, it was determined, at her desire, that a small tumour, which existed on the outer side of the breast, should be extirpated—the patient, in all other respects, enjoying perfect health. The tumour, which was of the size of a small seed, and rolled under the finger, was situated in the subcutaneous stratum, some lines on the outer side of the breast, and below the pectoralis major. It had arisen, without evident cause, at a period which could not be precisely indicated.

On dividing the integuments to the extent of four fifths of an inch, I was somewhat surprised at the difficulty I experienced in discovering the tumour at the bottom of the wound. However, I eventually managed to pick it up with a hook, and cut it off with scissors. The operation was followed by no ill consequences; the pain ceased immediately, and the patient speedily recovered from her wound and neuralgic sufferings. At a later period, however, she complained of shooting pains in the neighbouring parts, and

attentive examination enabled M. Rostan and myself to discover another tumour, still smaller than the first, being hardly so large as a grain of hemp seed. Having, however, from other circumstances, some ground for not believing literally all that the patient stated respecting her sufferings, I declined to perform a fresh operation, and she ceased to complain.

The little lump which we had removed seemed to us entirely independent of the mammary tissue, and on dissection exhibited the characters previously referred to as characterising neuromatous growths.

I ought to mention, in passing, that we sometimes experience considerable embarrassment, when the skin has been incised, in discovering a little tumour which we readily and distinctly feel before commencing the operation. When once it has lost its relative position to the subcutaneous layer, its small size and mobility are such that the eye and the finger easily confound it with the adipose granulations. It seems to me the more necessary to point out this difficulty, because it is far from being generally anticipated, and is met with in some cases even when the tumour is of considerable size. An instance of this latter fact shows, at the same time, that the operation may be usefully practised in a case in which the disease does not give rise to severe pain.

Case III.—*Hypertrophied glandular lumps in the left mamma; extirpation; poultices; cure.*[1]

The following, also, is one of the most interesting neuralgic tumours that I have met with in the breast:

Case IV.—*Acute pains in both breasts, which presented nothing noticeable except slight hardness, with a vague appearance of lumps, especially in the left breast, which was surrounded with a chain of engorged axillary glands. Operation on the left side; the right breast remaining somewhat affected. The amputated breast presenting on the outer side four or five small lumps, rendered very distinct from the gland by their hardness and reddish appearance, but intimately adherent to it; the lymphatic glands filled with tuberculous or caseous matter collected together in small solid masses.*—Campagnot, æt. 27, without occupation, of nervous temperament and

[1 The details have been omitted.—Ed.]

good constitution, never having been married, always enjoying excellent health, which the regularity of her habits contributed to preserve. Naturally lively, but lame from her birth, she had often struck herself against the furniture and doors; four years ago, she sustained several such contusions, in the course of a few weeks, but did not notice either swelling or redness in consequence, but merely slight uneasiness; and four or five months afterwards, shooting pains, which were more severe at the time of menstruation. The pains were situated in the parts that had been struck, that is, on the outer side of the breast. A year later, there formed a swelling, the size of a hazel nut, followed, ten or eleven months afterwards, by the appearance of other tumours, of the same size, in the axilla. The patient applied linseed poultices, took river baths in summer, and contented herself at other times with keeping the painful parts hot. A year ago, she received a violent blow from the elbow, in the right breast, during some obstruction in the street. She then employed numbers of leeches, plasters, and hemlock poultices, but without benefit; and for a year past the pains have been more severe. Tired out with the non-success of her treatment, and the long continuance of her sufferings, she left Condom, her native place, and came up to La Charité, on the 11th of April, 1847.

The breasts are not larger than usual, and present no tumour evident to the sight; but they are very sensitive to the touch and to pressure; and the patient complains loudly. On the left side above, and on the inner side, the glandular tissue is supple and elastic; below and on the outer side, it is harder and lumpy; and it is in this situation that the patient suffers so acutely. In the axilla are three tumours, placed side by side, each as large as a hazel nut, and very painful. There is nothing whatever in the axilla on the right side. As there was no engorgement of the axillary glands, we could but class the disease amongst the neuralgic affections of the breast without degeneration; but the presence of the glands necessitated the performance of an operation which the case required, and which the non-success of the former treatment justified—an operation too of elaborate nature, for it was necessary to include both the gland and the breast. Accordingly the whole was removed together, for the pains were too irregular in the neighbouring tissues, and the indurated parts were too imperfectly circumscribed for us not to fear the extension of the disease. Charpie was placed in the wound, which was brought together with

diachylon plaster. The gland itself, cut in slices, showed on the outer side four or five lumps, which were very apparent from their hardness and reddish appearance; the tissue enveloping them resembled that of the gland, but was harder, more homogeneous, and of a milk-white colour. The tumours in the axilla did not seem to be of the same kind; they were lymphatic glands filled with tuberculous or caseous matter, collected together in little masses. Smart bleeding occurred during the day, but was arrested by means of styptics and refrigerents.

22d.—The dressings were removed, and from that time all went on satisfactorily.

The patient, although well, did not leave the hospital until the 14th of June, when she had no more shooting pain in the side operated on, but still complained of the right side, where, situated immediately below the nipple, there were two or three small, deep-seated, moveable lumps.

In place of cutting out these painful lumps, attempts have been made to get rid of them by subcutaneous incision. Two patients treated in this way by M. Rufz got well. It is an operation which Tanchou[1] is also said to have employed; but I imagine in cases of a different kind. Resorted to in cases of simple lumps in the mammary tissues, or in cases of pain not proceeding from nodosities, or from several rolling, moveable tumours, isolated enough to permit of their being extirpated, subcutaneous incision may perhaps be practised, in despair of tracing the cause of the disease.

A good tenotomy knife being introduced in a lancet puncture, between the seat of the pain and the root of the vessels or nerves, we are enabled to divide the tissues between the integuments and the ribs; and as it is difficult to tell which is the nervous filament which keeps up the sufferings, it is better to cut boldly than the reverse. In case of uncertainty, as to the boundaries of the disease, it seems to me advisable to perform the operation in several places successively, rather than to run the risk of missing the exact spot. If after we have attacked the pain in various directions, we find it reappear in other places, it is permissible to resort to the same proceeding afresh. By pursuing this plan, M. Rufz has not only found the pain to disappear, but the little lumps also to soften, and the patient to recover completely.

[1] 'Tumeurs cancereuses du Sein,' p. 126.

When the case is one of distinct lumps, which can be readily extracted, I consider the operation for the removal of the tumour to be preferable; for it is hardly more severe than the simple subcutaneous incision.

Compression, which I have never been induced to try, and which I imagine can but rarely succeed, has nevertheless been employed by M. Rufz.

In whatever manner it is attempted, compression of the breast is so difficult to be accurately maintained, is so fatiguing to the patient, and requires to be kept up for so long a period, that its utility in the treatment of such small tumours, seems to me very questionable. Still, as there is nothing to terrify in it, and as it can easily be given up, it is a remedy which we may always try before having recourse to an operation. If the tumours are situated in the substance of the breast, compression may afford some chance of success; and in other cases, it is not impossible that it may calm the acuteness of the pain, at least for a time.

§ 5. NEURALGIC PAINS.—There is a painful condition of the mammæ in which, if tumours or nodosities exist at all, they are so small and ill developed, that it is almost impossible to determine their existence. The disease is indicated only by pain, and occasionally by some heat or swelling. The tumours spoken of in the preceding chapter are, as I have already remarked, accompanied by a similar train of symptoms as the neuralgic affections. The same remark applies to the lobulated masses found in the substance of the gland; and there is every indication that the cases mentioned by A. Cooper, Colles, Rufz, Valleix, and Robert, belong also to the same category. In both cases, the disease in fact is constituted by tumours accompanied by acute pain; but as swellings of the same kind exist pretty often, without marked pain, and as, on the other hand, the pains are met with without there being any tumour, it seems to me advisable to look upon these two conditions as two distinct lesions, and to study them separately.

There is no difficulty attending the diagnosis of neuralgia of the breast. It is not accompanied by any material change in the tissues, neither swelling, redness, nor tension. The pain usually proceeds by radiation; starting from the breast, it proceeds in a radiating manner, sometimes towards the side of the neck and head, sometimes towards the shoulder, sometimes towards a particular

spot, or along the whole extent of the upper extremity, sometimes back as far as the spine, and at other times downwards towards the hip and lower extremity. There are instances also in which it has affected all parts of one side of the body at once. In some patients it is permanent, subject only to exacerbation and remission. Frequently also it sets in only at particular hours of the day or night, at certain fixed times; but usually it occurs irregularly or variably. I have often asked myself the question, Whence does it proceed? Is it from the intercostal nerves? I have carefully but fruitlessly examined the course of these nerves, bearing in mind the researches of M. Valleix; and the same with regard to the filaments proceeding from the cervical plexus; so that I have doubts remaining as to the nature and exact origin of the pain, which from the accompanying turgescence, burning heat, and engorgement, so nearly approaches to neuralgia.

The most attentive examination, and repeated explorations, moreover, enable me to affirm that, in certain cases at least, the affected breast contains no tumour or appreciable material alteration. It is rare also for the pain to proceed from a fixed spot, or to have a fixed seat. The patients are usually unable to do more than vaguely to indicate its situation; the sufferings extend to the whole breast, and occasionally also to the neighbouring parts.

Dull and bearable in some cases, the pain in others is so acute and so easily exasperated, that the patients scarcely dare to move, and think themselves obliged to remain in bed for days together, as the least irritation or contact with the dress brings on the crisis; however, when once the first apprehensions are overcome, the examination of the breast with the hand, and the employment of pretty firm pressure, soon ceases to produce much uneasiness. Nothing is so variable as the progress and intensity of these pains. Partly influenced by the electric, hygrometeric, and barometeric conditions of the atmosphere, they are also modified by the menstrual period, which usually augments their acuteness. I have seen them, after enduring for a fortnight or month, disappear for a similar period, and return in the same way, without appreciable cause. At other times they vanish, return, increase, and diminish, by turns, from week to week, or from month to month, but at extremely irregular intervals. The disease is almost always met with in nervous impressionable women, whose imagination is easily excited. No period of life is absolutely exempt,

except infancy, properly so called, and extreme old age. I have met with the affection in young girls of from twelve to fifteen years; and in women of fifty or sixty. However, it occurs particularly at the critical period of life, and in women of from thirty to forty years of age.

No one in France, I believe, treated of this affection, before I wrote a short account of it, in 1838.[1] Under the name of "*irritable tumour of the breast,*" a disease which is met with between the ages of sixteen and thirty, and which is accompanied by shooting pains, proceeding from the lobes of the gland itself, A. Cooper has described an affection which evidently belongs to the class of cases which forms the subject of one of the preceding articles. He seems to me to have confounded neuralgic pains with tumours of the same kind, although he takes care to observe that the mamma may become irritable without the formation of any appreciable tumour.[2]

Speaking of hard tumours situated in the tissue of the gland or near the axilla, the size of which rarely exceeds that of a nut, and is accompanied by pain, which women attribute to vexation, to the irritation of their dress, or to constipation, A. Colles[3] preceded A. Cooper, and described the same disease, after referring also to the neuralgic tumours spoken of above. Neither the Dublin surgeon, nor the London one, however, endeavoured to separate the pure and simple neuralgic affection from the painful tumour.[4]

I never saw, and am not aware, that any one else has seen neuralgia of the breast terminate unfavorably. From its continuance and intensity, it distresses, and may emaciate the sufferer; vomiting and disorder of the digestive organs may accompany it, but there is no degeneration or serious change in the structure of the breast itself. In a lady, who had been affected about eighteen months, extreme emaciation resulted, and eventually the digestive

[1] 'Dict. de Médecine,' Art. Mamelle.

[2] Translation of Richelot and Chassaignac, p. 532.

[3] 'On Surgical Anatomy,' p. 128.

[4] This is an error. On reference to pages 76 and 77 of Sir A. Cooper's work on the 'Diseases of the Breast,' it will be seen that he clearly distinguished between the two classes of cases. After, at some length, describing the simple neuralgic affection, and likening it to tic douloureux, he goes on to say, "Besides this irritable and painful state of a whole, or part of the breast, a tumour sometimes is found distinctly circumscribed, highly sensitive to the touch," &c. In fact, his account of the irritable breast without tumour is remarkably graphic.—Ed.]

organs became seriously compromised. After a short time her life even was threatened; but on close examination, I discovered that the pain, apparently neuralgic, which had hitherto attracted our attention, depended on a large cancerous mass behind the breast, and seemingly adherent to the ribs.

In these cases, we must have recourse to the same remedies as for neuralgia generally. Baths—gelatinous, alkaline or sulphurous; narcotics internally, bismuth, zinc, antiperiodics, especially quinine, mineral waters, preparations of iron, and everything that can regulate the menstrual functions when disordered; marriage, gaiety, travelling, change in the habits or diet, are also useful, and should be tried.

Almost all women affected in this way, are miserable, and complain less, indeed, in consequence of the pains they suffer, than from the idea that the disease either is, or will become serious; and that they have, or will have cancer. It is, therefore, of primary importance to reassure them on this head, and to calm their heated imaginations.

If we succeed in thus giving them ever so little courage, we at once destroy half the evil merely by words.

I could quote a vast number of cases, in which the patients had been kept in insupportable agony by their terrors and the language of those about them, but who were completely cured by two or three conversations. In fact, the greater number of patients suffering from pain in their breasts would hardly complain at all, and would pay but little attention to it, if the pain did not perpetually induce in them the idea of cancer or of some malignant tumour.

As topical measures, we may successively try all the remedies useful in the case of painful indurations. Colles made use of acetate of ammonia in water, or lotions of camphorated spirit. I employ especially oils with laudanum or belladonna, and sometimes also lead lotion, cherry-laurel water, or iodide of lead ointment.

If the breasts are at all voluminous, I have generally derived advantage from a precaution mentioned elsewhere. Having noticed that when ill-supported, and left to its own weight, or when pushed out of its natural situation by the dress, the breast becomes subject to, or induces, a certain amount of fatigue and uneasiness, I came to the conclusion, that the neuralgic pain may in some cases proceed from this circumstance. In con-

sequence of its weight, the breast produces in some of the tissues composing it, or surrounding it, a dragging which is evidently capable of giving rise to neuralgic pain. May not a corset which presses irregularly, or pushes the breast towards the axilla, for example, a practice resorted to by the lower orders designedly with the intention of augmenting the transverse diameter of the chest, and of thus giving more grace to the bust, act as its exciting cause? Who does not know how much an irregular fold in the skin, or a malposition of the smallest organ may cause ennui and pain? It is necessary, therefore, that either by means of a bandage, or of a sort of shoulder-belt, or with stays constructed with gussets for the purpose, the patient should keep the painful breast moderately elevated, as if they wished to push it up towards the substernal fossa.

We can scarcely believe how much relief this simple precaution may afford. In some cases, I have known it cure patients who have been suffering for months; and there is nothing, moreover, to prevent our making use at the same time of the topical applications which I have mentioned, nor to prevent our employing appropriate constitutional measures. As for more energetic treatment, I have never seen any indication or necessity for it. Blisters to the painful parts, either to denude the skin, so as to allow of the employment of narcotics by the endermic method, or to destroy the neuralgia directly, may doubtless be tried, and sometimes successfully; but I recommend surgeons not to repose too much confidence in such measures. I may add, that the few words devoted by M. Valleix to pains in the breast, as well as the cases which he seems to have borrowed from M. Robert, may refer to tumours complicated with neuralgia, rather than to neuralgia without tumour, and do not prove much in favour of small blisters.

Although compression does not appear to be a rational measure in such cases, yet the disease is sometimes so obstinate, and its progress so whimsical, and peculiar, that there can be no impropriety in trying it, after vainly employing other remedies.

§ 6. PAIN — IMAGINARY TUMOURS.—Between pain and the tumours just described, and pain and supposed tumours which exist only in the exalted imagination of the patient, there are no certain limits. In regard to pain there is this peculiarity, that as it may exist without any appreciable change of structure, it is

almost impossible to determine positively whether the patient really does suffer or not. Some women draw on their imaginations to so great an extent, that they lose their rest and sleep, persuaded that they suffer acute pain in the breast, and that it is the precursor or sign of some serious disease; others, again, proceeding still farther, imagine the existence of tumours in the mammæ. These things may, perhaps, seem strange and incredible, but there is no lack of examples to justify the description. Such pains and imaginary tumours are even frequently met with in practice.

Should some nervous, timid woman, with an active imagination, sustain a blow or injury to her breast; or from any other circumstance experience a sensation of uneasiness, fatigue, or suffering in it, in a short time she may, by the aid of her fancy, conjure up a picture of the most frightful disease. Her mind, fed with these ideas, takes cognizance of every sensation, and terror, which rapidly becomes extreme, from this instant leaves the patient without a moment's peace.

We find such patients flying to, and consulting all the world, seizing upon every remark to add a deeper tint to the sad forebodings with which their minds are incessantly preoccupied.

Some acquaintance, friend, or one of their parents has died of cancer, and a similar fate is reserved for them; such or such an one has ulceration, which commenced with symptoms similar to those which they are now experiencing. Their friends or parents terrified, in their turn, end by partaking of the anxiety of the patient, and what is even more incredible, the medical attendant, influenced by this perpetual alarm, himself sometimes shares in it, and soon becomes afraid to reassure the family with any degree of firmness. Amongst other cases of the kind, that I might quote, the following is one of the most remarkable.

Case I.—Madame V., a fashionable woman, still young, handsome, intelligent, and of cultivated mind, somewhat thin, and of nervous or slightly lymphatic constitution, suffered from an abscess in the left breast, on the occasion of her third confinement. This abscess which it was necessary to open, was attended with pain, and smart febrile reaction, but eventually got well, and left no trace of its existence. Nevertheless, some months after, on touching the mamma on that side, Madame V— happened to place her finger on a lobe of the breast, which seemed to her harder and

larger than the others; and at a later date, she recognised the cicatrix left by the incision into the old abscess. Terrified at this discovery, she immediately lost her sleep; I was summoned without loss of time, and on examination became convinced that everything was in the natural condition. For some time my assurances and explanations quieted the patient; but the slightest symptom of pain, uneasiness, or fatigue, sufficed to renew her original anxiety. Her fears thus returned to so great a degree, that notwithstanding my explanations, and all the remedies that I could employ, for three consecutive years she plagued me to remove her breast; and yet it was this same lady who had the extremest dread of an operation, and fell into frightful convulsions when I was compelled to plunge the point of the lancet into her abscess. Her mind was made up on the subject: she had a tumour, and in the tumour she experienced shooting pain; her breast had increased in size, all of which are indications of cancer; we designedly concealed from her the nature of the disease; and as she would not on any account run the risk of dying of cancer, a frightful mode of death, which she had witnessed in the case of one of her friends, the idea of the operation had lost its terrors, and she asked for nothing better than to be allowed to submit to it. Eventually, however, she was made to understand that her imaginary tumour, which neither altered in shape, size, or density, could not really prove so dangerous as she had at first supposed. By degrees her calmness returned, and at the expiration of ten years, she no longer raised any doubt as to the condition of her breasts.

Case II.[1]

In some instances, as in the ladies spoken of above, there was at any rate some tangible cause, such as a blow, an excoriation, or external injury, serving to originate these imaginary lesions; but we meet with other persons in whom it is impossible to assign any material cause whatever, for the unfortunate ideas which possess them. At times, it is the beating of the heart, some passing pain in the side, or some itching of the nipple, or other insignificant derangement of the health, which suggests these terrors to them.

Case III.—A lady, rather above 40, of good constitution, but

[1 This case, which is very similar to the last, has been omitted.—Ed.]

nervous, and extremely timid, who had enjoyed excellent health, and menstruated regularly, came to consult me for the first time in 1843. She had already sought advice in her native place, for a tumour, which she believed existed in the left breast, but the medical men at first considered her malady of little importance, and contented themselves with recommending some very simple treatment. Eventually, however, that is to say at the expiration of about six months, as she still continued to complain, and they hardly knew how to characterise her sufferings, they advised her to come up to Paris, for the purpose of having an operation performed. Her disease, she stated, had commenced in palpitation of the heart, and afterwards she had experienced a pain or stitch in the side, a little below, and on the outer side of the mamma; and subsequently, from time to time, shootings beneath the nipple, and a sensation of fatigue and dull pain behind the breast. Impressed with the idea that she had a tumour, which would become a cancer, for which it would be requisite to amputate the breast, she fell a prey to extreme anxiety, and scarcely slept without her rest being disturbed by her sad forbodings. Her digestion had eventually become impaired, and she had grown sensibly thinner, both which circumstances she attributed to the imaginary tumour in the mamma. I made a careful examination, and must confess that it was not without surprise that I ascertained the absence of any lesion whatever in the organ which the patient considered to be so profoundly affected. After encouraging her to the utmost, I sent her home, with a prescription for some simple topical application. Her intention in coming to Paris, however, had been to remain, and undergo an operation at my hands; but at last, she understood that her malady could not be very serious, as I made no mention of any operation, and instead of recommending her to remain in Paris, advised that she should at once return home. Notwithstanding all this, she took care to remark that, probably, my decision had been arrived at because I considered her too ill to submit to an operation which it was too late to perform!

At last she began to place some confidence in what I said, and almost lost her anxiety entirely. She came to me, however, once or twice a year just to be reassured, that she had no cancer, and that it would not be necessary to remove her breast. I examined her again in May, 1850, and also in 1852, and at that time, just as in the year 1843, her left breast was soft, regular, elastic,

and destitute of any tumour, or unnatural projection. Her menstruation had ceased without any unpleasant symptoms, and there was every indication that the critical period had been passed without danger.

It is not easy to say how many cases of this kind I have met with; there is scarcely a week, that I am not consulted about them, either at home or out of doors, amongst the ladies in Paris or in the provinces.

Although adult females have supplied me with the greater number of examples, it is, nevertheless, necessary to be aware, that neither youth nor age are wholly exempt from these imaginary complaints. It is not exclusively the size or shape of the breast that leads to them, for whilst in some of these patients the breasts were voluminous and pendulous, or voluminous and firm, either very heavy from an enormous mammary gland, or from excessive fat, I have seen others whose breasts were regular, hemispherical, and of small size.

Case iv.[1]

It is not exclusively amongst the well-to-do or rich classes of society that such whims are found to exist. I have met with many such, either at the public consultation at the hospital, or in the clinical wards, and could easily collect a dozen cases a year, if I were to take charge of all who presented themselves.

Cases v, vi, and vii.[2]

The cessation of menstruation does not confer entire immunity from such fears, as has already been remarked, and as the following case proves.

Case viii.—Maria Mapauleau, æt. 52, a laundress, of good constitution, came into the hospital, in 1838. She was in good general health, but fancied that for the past five months she had suffered from a tumour in her breast. Having consulted various medical men, who, she said, had not given her any relief, and indeed had told her that her disease was of no consequence, she

[1 This case, as it resembles the two cases quoted already, has been omitted.—Ed.]
[2 The details have been omitted.—Ed.]

finally came to the hospital, to have an operation performed if it should be considered necessary. Her sufferings were on the left side; but both her breasts were equally free from disease. The slight uneasiness or pain which served as a pretext for her anxiety had originated from no cause whatever, that she could point out. It might be that the breast, which was naturally ill supported, afforded the explanation, in its size and weight, which, however, could not have been considerable.

As soon as I was satisfied that all was imaginary, that there was neither tumour nor disease of any kind in the breast, I advised the patient to return home, to resume her usual habits, and to remain perfectly easy respecting the disease with which she thought herself to be affected.

In some patients, however, the idea of the existence of a tumour may be kept up by some appearance of swelling, thickening, or pain.

It would be useless to multiply cases of this kind, which are all alike, and could be extended considerably. One remark, however, occurs to me as important, and that is, considering that, not only patients, but even surgeons, may believe in the presence of a tumour in the breast, which in reality has no existence at all, it follows that there must be something in the condition of the mamma itself leading to the mistake.

Anatomical peculiarities which may lead to the belief that there are tumours in the breast, which really do not exist.— We can readily understand how an impulsive, timid patient, whose imagination is easily excited, may persuade herself of the existence in the mamma of tumours of malignant nature, although there may absolutely be no foundation for the idea. Such notions are not more strange than those of most hypochondriacs; they are even more easily explicable. In fact, whenever a woman whose sensations are easily excited experiences uneasiness or pain in the breast, and in consequence of suggestions or conversation chances to fix her attention on the unfortunate results of affections of that organ, immediately, magnifying existing facts, and storing her imagination with all the particulars relating to what she dreads, she readily imagines herself afflicted with serious disease.

Medical men are well aware how ingenious women are in creating reasons for their torments; how easily they realise the suppositions of their minds, and how prone they are to push to

extremes the chimera with which they once become impressed; but it is not so easy to understand how medical practitioners themselves manage to make these mistakes. When the case is only one of pain and scattered lumps, the mistake is not surprising, for the breast has not always the same consistence; the density of its lobes is not always alike, they may be larger or smaller, or more projecting on one side than on the other; their degree of sensibility, of fixedness, or mobility, may not be similar throughout, so that it is quite possible for a patient who has long considered herself indisposed, to believe in the existence of tumours where there is in reality no disease at all.

Under these circumstances, I can only recommend experience, attention, and great caution; but it is not to this point in particular that I wish to direct the reader.

The source of the error which I have in view is to be found in the manner in which the examination of the gland supposed to be affected is conducted. If, in order to make out its condition, we grasp the mamma in one of its transverse diameters, or in two points of its circumference, and endeavour to embrace a portion of it between the fingers, with the view of determining its form, or its volume, or consistence, the first idea suggested is that a mass of scirrhous or a tumour of some sort is contained within it.

This arises from the circumstance, that when the gland is thus placed between two solid bodies, that is between the two fingers, which on pressure, prevent its escape from one side to the other, it seems to be endowed with considerable consistence, which we do not sufficiently take into the account. Again, those lobules which are larger, or enveloped in more compact tissue than the rest, from the very first give the idea of a distinct tumour especially when the case occurs in a patient who professes to have suffered for a long period, and we make the examination with the expectation of finding one.

This source of fallacy can be avoided by a very simple manœuvre; it consists merely in letting the breast free, and making the examination as it lies on the parietes of the thorax.

Just supporting the circumference with the fingers of one hand, we gently press its different parts, with the fingers of the other applied to its anterior or cutaneous surface: in this way, if the breast be sound, we meet with nothing but what is natural; its suppleness and elasticity is similar to that which exists on the

other side. By this method also, on the other hand, we detect a real tumour as readily as by any other. For long past I have recommended my pupils never to omit both these methods of exploration when, in a doubtful case, it is important to determine the question of the existence of a tumour in the breast.

The form and the projection of the ribs, in some patients, may also prove a source of fallacy. It is not uncommon to find under the mammæ one or two ribs which are more convex, more thickened, or larger than seems consistent with the natural condition. In a person who fancies that she has a tumour which causes her suffering, such a condition of things should not by any means be lost sight of, for it might be mistaken for some abnormal production, for a tumour adherent to the breast, as I witnessed on two occasions. In other women, the top of the chest is so arched that if pain really exist, or is induced by fear, the practitioner may readily be deceived, so as to participate in the fears of the patient who consults him.

Case ix.—I am still in the habit of seeing the widow of a physician, whose scientific reputation is held in some esteem, who affords an example of this condition. Twenty years ago, a tumour, most probably of innocent nature, was removed from her left breast. After the death of her husband, being a prey to profound grief, she fancied that a cancer had made its appearance. Various opinions had been given to her, but no one had attempted to reassure her completely. When she came to consult me, in 1845, I confess that I entertained some fears; all the parts comprised between the cicatrix and the neighbourhood of the clavicle on one side, and between the axilla and the sternum on the other, appeared to be so hardened, prominent, and homogeneous, that the idea of lardaceous degeneration, or scirrhus of the whole region, occurred to me; the more so, too, that the patient said she experienced much shooting pain and stiffness. However, I had always some doubt, and asked myself, whether this condition might not be the consequence of simple subacute inflammatory action; for there were no enlarged glands in the axilla; and in other respects the skin was sound, the mamma unaltered, and the general health continued good. My prescriptions were based on the last supposition; the patient followed them, and returned to me at the end of the two months, more frightened than ever. As her condition had undergone no change, and she was acquainted with many medical men,

she had consulted several, one of whom plainly told her that her tumour had grown again. I made a fresh examination with the greatest care, and finding nothing more than on the first occasion, I endeavoured to reassure her more firmly than ever. Two months afterwards, on a new examination, I became convinced that there was positively nothing unnatural in the breast; what had kept me in suspense hitherto was explained by the extreme arching of the ribs of one side, and by the depression left by the extraction of the tumour at the superior part of the breast on the other. As Madame M. feels some anxiety and uneasiness on the subject, she still comes to see me; but since the year 1849, she has had no question about any cancerous affection, or tumour of any sort, although no change has taken place in the condition of the left subclavicular region.

The observations made in this case are applicable to other women, in whom we may be led to fear the return of the disease after the removal of tumours which were truly cancerous. I shall have occasion to mention them again, at a somewhat later period.

§ 7. TUMOURS FORMED OF EXCRETED (EXHALÉES) OR EFFUSED MATERIALS.—All the tumours referred to above have, as their basis, some of the tissues in the mammary region; those here spoken of seem, on the contrary, to originate in materials effused into the interstices or natural strata of the organ. Four varieties of tumour appertain to this group. One is constituted by lymph, tuberculous matter, or pus, more or less solidified; another has for its basis, milk in its natural condition, or some of its constituents; a third is composed at first of blood, fibrine, or albumen; and the fourth approaches to the characters of osseous productions. As each of these arises from different causes, is subject to different transformations, leads to different results, and requires different modes of treatment, it seems most convenient to treat of them in so many distinct chapters.

A. *Lymphatic or Tuberculous Tumours (cold).*—The tuberculous affections of the breast have never been exactly described, either because they are rare, or because they are generally combined with other morbid changes.

It may be questioned whether A. Cooper, who devotes less than one page[1] to scrofulous tumours of the mamma, and quotes

[1 Translation of Richelot and Chassaignac, p. 527.]

no example of the kind, referred to the genuine tuberculous tumour rather than to the fibrous tumour.[1]

I cannot pronounce a positive opinion from the few details which he has furnished. A primary difficulty, however, presents itself: what is intended by the name tuberculous tumour? If we speak of tuberculous masses, strictly so called, they must be of extreme rarity; and can be met with only in women who have tubercles in other organs. Do we mean that they are lymphatic or scrofulous concretions? Their rarity in that case can scarcely be less, since anatomists have never succeeded in unquestionably demonstrating the existence of lymphatic glands in the mamma. Are they varieties of cold abscesses with concretion, or hardening of a large portion of the effused material? In such a case the tumour can scarcely be more than a symptom of some other lesion, or the indication of a damaged constitution. If, however, we confine ourselves to the literal sense of the word, tuberculous tumours are, on the contrary, pretty frequent; for scirrhous and encephaloid disease often occurs under the form of tubercle; but it is evident that here the form is not the essential point, and the distinctions between the different varieties of scirrhus must be sought elsewhere. However this may be, I have never met in the breast with genuine idiopathic tuberculous tumours, comparable to glandular tumours. What I have seen were of three varieties.

1. *Disseminated Tubercles.*—These tumours are met with in some patients, in number from eight to twelve, in the same breast, varying from the size of a hazel nut to that of a walnut, and seemingly made up of so many lobules, secretory structure, and fibro-cellular tissue included. Almost all the lobules, which are often softened at the centre, are infiltrated, or filled with tuberculous or caseous matter, that is to say, with a grumous white, and chalky, or with a reddish material, mixed here and there with little

[1 The only foundation for this supposition is the fact that Sir Astley, speaking of these tumours, observes, "I have seen them removed from an error in judgment respecting their nature; and when cut into after their extirpation, they are found to be composed of a loose and curdly fibrine very unequally organized." The illustrative drawing is unequivocally that of a tuberculous tumour, and the chapter on the subject is entitled, on the "Scrofulous Swelling of the Breast." The distinction between Mons. Velpeau and Sir Astley seems to have been, that the former thinks it right in some cases to remove these tumours, whilst the latter emphatically condemns such a proceeding.—Ed.]

foci, of greyish, serous, and floeculent pus. In one case, the disease was of four years' duration, and had, the patient said, been induced by a blow from the elbow. One of the axillary glands which had become as large as a walnut, was covered with tuberculous or cheesy lumps. Although the lungs appeared sound, and there was no glandular enlargement elsewhere, the patient had always been delicate, and of marked tuberculous diathesis.

II. *Multiple Lymphatic Tumours.*—If some varieties of neuralgie induration and of scattered tubercles lead to the supposition, without absolutely demonstrating the fact, of the existence of lymphatic glands in the mamma, the following case seems to me to add still greater weight to the supposition.

Case I.—A woman, of from forty to fifty years of age, who was for a long time an inmate of the Clinical Hospital, where she died, and whom I saw on several occasions, presented in both breasts numerous tumours, which had almost all the characters of lymphatic glands, much enlarged and degenerated. The tumours were globular, of a pale red colour, separate from each other, of almost fibrous density, and covered with points, and yellowish or greyish clots, like tuberculous glands. There were similar tumours, to the number of several hundred, on the neck, in the axillæ, the groins, and everywhere, in fact, where anatomy has placed the existence of lymphatic glands beyond question. They existed also in a number of other parts where the glandular lymphatic system has never been demonstrated. These tumours were carefully dissected by M. Lenoir, who showed them to me, and they were so exactly like degenerated glands, that I have no hesitation in classing them amongst the scrofulous or tuberculous tumours of the mamma.

Case II.—A case, bearing a great analogy to the foregoing, has since occurred in my practice. The whole body of this patient, who was about thirty years of age, and of irregular menstruation, was covered with tumours. At all points of the neck, the axillæ, hams, groins, and iliac region, &c., there existed groups and rows of innumerable, moveable, elastic, indolent tumours, varying in size from a pea to that of an egg. These tumours, which exactly resembled degenerated lymphatic glands, were observable in both mammæ as well as in different parts of the body, and along the course of the extremities. The mesentery was full of them, and

there was every indication that the bronchi were similarly filled, but no single one was either inflamed or softened; they had been insensibly developed, without evident cause, during a space of four or five years. The iodide of potash, and subsequently the iodide of iron, administered for two months, was followed, during several weeks, by a marked diminution in the mass of the tumours; but at a later period, the disease became stationary, and the poor woman returned home in the same condition as before she came to the hospital.

III. *Purulent Lymphatic Tumour.*—Tuberculous tumours, without general tuberculosis, may chance to occur in the breast. They are usually single, and have no fixed size or form. Lumpy, and irregular in shape, they may present themselves in the centre of the gland just as under the skin, but more commonly they become developed beneath the mamma. Supervening in consequence of a blow, or without evident cause, they sometimes progress very slowly and indolently, and at others more rapidly, and accompanied by subinflammatory symptoms. They are composed of hypertrophied, lardaceous, greyish tissue, of a sort of cyst, which is very thick in some points, and very thin in others; the loculi of which contain either greyish, flocculent pus, or free albuminous clots, or caseous or thick tubercular matter, adherent to or combined with the neighbouring tissues; sometimes, however, they are represented by homogeneous masses, which are solid though friable, and which, by their form, simulate pretty closely encephaloid or colloid masses.

Case III.—In the year 1836, I was requested by M. J. Pelletan, of the Faubourg Poissonnière, to see a woman, about thirty years of age, who had for two years been affected with a tumour of the breast. The tumour, which was about the size of a hen's egg, lumpy, moveable, indolent, and situated between the lobules of the mamma, had arisen without external violence or appreciable cause. No fluctuation could be discovered in it; it was elastic, and tolerably hard, with a certain amount of thickening. It was surrounded with pale and thin tissue, and occurred in a woman who was much emaciated, and whose general health had long been feeble.

The most attentive examination failed to detect any internal organic lesion in the patient, but as the disease of the breast had resisted the different remedies which had hitherto been applied to

it, it was decided, on consultation, to proceed to the extirpation of the tumour. There was nothing remarkable in the operation; it was simple, easily and rapidly executed, and in less than five weeks the wound had cicatrized. Dissection of the mass showed —1st. The fibro-glandular tissue, distended, thinned, and forming a sort of cyst incompletely septiform. 2d. Masses the size of the thumb, or of a filbert or walnut, agglomerated together, and in some parts fixed one against the other, and in others separated in portions of their circumference by vinculi or layers of healthy tissue. There was every indication that these masses were the result of exudation, and they were destitute of vascularity or organization. Their substance was homogeneous, of a light blue or yellowish white. On pressure, they yielded, and were broken up, and became transformed into an easily friable substance. They had not the texture of encephaloid, from which they differed in the absence of any organized basis; nor did they resemble colloid, which is transparent or bluish, friable or gelatinous. They were, in one word, masses analogous to crude tubercles, and distinguished from them only by their excess of volume.

I have never since met with a similar tumour; and as in this patient there were neither enlarged lymphatic glands in the neck or axillæ, nor marked symptoms of phthisis, I was left in much uncertainty as to its nature. Three months, however, had scarcely elapsed, before the chest became affected, and glandular enlargements were not long in appearing on both sides of the neck.

Death followed some months later, and enabled us to ascertain the existence of both tubercles and cavities in the lungs, and also that most of the enlarged glands contained softened tubercles, and that two tumours similar to the first had appeared in the breast, and commenced to soften in various points. It is difficult not to recognise this case as an example of the development of genuine tubercular tumours in the breast in a phthisical patient.

Excepting in those cases in which they coexist with a general condition of tuberculosis, either well marked or obscure, it is rare to meet with such tumours in the mammæ. Almost invariably there is at the same time some morbid change in the ribs or cartilages, or some more deep-seated lesion, which lies at the root of the external disease. In such cases, also, the swellings are rather purulent than concrete, and are more analogous to cold or symptomatic abscesses than to solid tumours properly so called.

Case iv.—A girl, æt. 19, presented on the sternal side of the right breast a globular tumour the size of half an egg, which was fluctuating in one of its projections, and solid in the others. It was pale, indolent, incompletely moveable at its base, and occurred in the person of a short but well-proportioned female, of good general health. Its cause was unknown, and its development slow; there had been no hæmoptysis, and no cough; percussion and auscultation indicating that the lungs were sound. On incision, two spoonfuls of fluid, greyish fetid pus, escaped. The rest of the tumour seemed to me composed of thickened healthy tissue, in combination with tuberculous matter; and the abscess communicated by a sinus and fibrous cord with the anterior division of the mediastinum. Under ordinary treatment, and contrary to my expectations, as I feared the existence of some organic lesion in the chest, the wound cicatrized, and at the end of two months the patient left the hospital cured.

Whether there was some circumscribed caries of the mediastinal surface of the sternum, or of some of the cartilages, or whether there was a diseased gland in the mediastinum, or whether it was simply a case of chronic formation, of plastic lymph or pus, it is in any case evident that the tumour in this girl could scarcely be classed otherwise than amongst tuberculous swellings.

Another case, however, also apparently local, obstinately withstood much more energetic treatment.

Case v.—*Tuberculous and purulent cyst in the right breast; tubercles in the crude state; extirpation; the patient went out before the wound had healed.*—Sorden, æt. 29, of pretty good constitution and sanguine temperament, miscarried six years back, in consequence of a fall. At a later period she suffered from ascites. Two years ago, she became aware of the existence of several indurated points in the right breast, and for six months past she has suffered from continual pain, which has become somewhat more acute during the last three weeks. The tumour, situated on the inner side of the breast, is moveable and hard, with some parts softer than others, so that its consistence is not the same throughout; in front it is lumpy, but behind, these lumps do not exist. The skin, which is moveable, has undergone no change of colour.

August 3d, 1846.—The patient complains of acute pain in the

mamma, and of loss of sleep. An ointment of the proto-iodurate of mercury was applied.

5th.—At the urgent solicitation of the patient, the tumour was extirpated.

The operation consisted in two elliptical incisions, the outermost of which was an inch from the nipple; the tumour was dissected out, but not entire, for it was continuous by a pedicle among the costal cartilages as far as the anterior mediastinum. It was a tubercular and purulent cyst, the tubercles being crude.

After the operation, the patient continued in a critical condition until the 27th, when she left the hospital with the wound still unhealed, but looking tolerably healthy.

Here, again, the tumour was only a symptom of or dependent on deeper-seated disease. It so often happens, in fact, that some morbid change either in the lungs, the internal thoracic glands, the sternum, ribs, or cartilages, gives rise in or around the mamma to semi-purulent tumours, cysts, or swellings filled with pus or semi-hardened matters, that it is always somewhat difficult to separate tubercular tumours completely from some forms of symptomatic abscesses. I have met with this class of swellings in almost all parts of the breast.

A young woman, in other respects healthy, came to the public consultation, in October 1846, with one of these swellings below and on the inner side, at the most projecting part of the corresponding sterno-costal arc. Some weeks before, I met with another immediately below the same part, and I also saw one on the outer side or towards the axilla.

Those that I have met with above, as well as those below and on the inner side have always been larger than the preceding. In all these cases, the tumour was so closely applied to the bones or parietes of the chest, that it was scarcely possible to mistake it, or to imagine it to be anything else than a purulent or symptomatic tubercular abscess. I have, however, seen some which were so moveable and isolated, as to suggest the idea of their being really solid tumours, or independent idiopathic cysts.

A young woman, 17 years of age, short, strong, and apparently of good constitution, presented a well-marked example of it, at the hospital, in 1852. In another case, mistake was so easy, that the patient was sent to me by a competent practitioner, as a case of cancerous tumour, for extirpation.

The prognosis of tuberculous or glandular tumour is, in general, difficult to determine precisely. It is indispensable, in the first instance, to take into account the constitutional condition. If the mammary tumour prove to be merely the external manifestation of some deep-seated lesion, the prognosis must evidently depend on the primary disease, and not on the tumour. For instance, what is to be said of a tuberculous tumour of the breast in a patient who has phthisis? What of tumours in the breast apparently glandular, when at the same time similar ones exist throughout the body? What, in short, of various symptomatic tumours which we know proceed from disease of the bones; or of some of the viscera of the chest? Even supposing that they are idiopathic, these tumours, the development of which is almost always slow, which rarely attain a large size, and make their appearance, now from some external irritation, now without known cause, have always a dubious prognosis, as compared with the prognosis of other innocent tumours. Scarcely any but delicate, pale females, whose fibre is soft and lax, are subject to them; and the enlarged or diseased glands in the neighbourhood prove sufficiently well that at least one of the great systems of the economy is deranged. In this point of view, then, the prognosis is always serious. Those scattered lumps and tubercles, which seem to form part of the glandular lobules, are, perhaps, in their essence, of a different kind to the genuine tubercular tumours; the pain accompanying them, which is sometimes lancinating, and occurs in paroxysms which vary in acuteness, according to an infinity of circumstances, at once distinguishes them from purely glandular tumours. In place of forming separate masses, one can scarcely say, at first, in what they differ from the lobes of the gland. They preserve their elasticity and suppleness so long, that they are not destitute of analogy with multiple neuralgic tumours, and their prognosis is rather more independent of the internal or general condition, than that of the other two varieties of glandular tumours.

Treatment.—The treatment of lymphatic tumours must necessarily vary in accordance with their nature. When there is tubercular phthisis, we must of course resort to measures appropriate in that disease. In such cases the mammary tumour forms too secondary a consideration to deserve much attention. Anæmia, chlorosis, and broken health, demand attention to the general health in the first instance; the treatment of the tumour occupies

only the second place. The management of abscesses dependent on disease of the bones leaves scarcely more to be done, for the the tumour, than those cases in which it is connected with genuine tuberculosis; the treatment resolves itself, in such instances, into attention to the symptoms of caries or necrosis. If idiopathic tumours of this kind are met with, we must attack them with the iodide of potash, cod-liver oil, good diet, tonics, and preparations of iron, internally; and with topical preparations of iodine, soap or hemlock plaster, and the Emplast. de Vigo, and repeated blisters externally.

Formerly, I recommended extirpation; but at present I am almost always opposed to that measure. If they depend on the state of the general health, it is useless to resort to the knife; if they are idiopathic, and the measures spoken of are unsuccessful, they will get well on being opened and treated like abscesses. Extirpation is only advisable in those rare cases in which the tumour is at the same time moveable, well isolated, and entirely concrete. They are, in short, tumours which are to be treated like cold abscesses, when they contain fluid; or like any other solid or well-circumscribed tumour of the breast, when they are the reverse.

In the extirpation of tumours with multiple lobules, in order to remove them entirely, so that we may be certain not to leave any portion behind, it becomes impossible to preserve any part of the breast. This circumstance should be sufficient to prevent our proceeding to such an extreme, until we have tried everything else in vain, and are convinced that if left to itself the disease will expose the patient to danger. However, as the difficulties are here the same as in the case of one variety of neuralgic induration of the mamma, I will not further dwell on them.

I may add, that those tumours which seem more particularly to deserve the name of tuberculous, often terminate by becoming inflamed, and eventually transformed into an abscess, which usually brings about their cure. Under such circumstances, we must resort to leeches, and emollients, just as if the case were one of inflammation. Dr. Warren gives a detailed account of the case of a young woman, æt. 17, in whom a tuberculous tumour of the left mamma became cured in this way; but who, notwithstanding, had a similar formation in the right breast in the following year.[1]

[1] 'Surg. Observations on Tumours,' p. 215.

The same writer relates two other cases of scrofulous tumours, and, like myself, affirms that they almost always get well without the necessity of extirpation, and that they require constitutional rather than local treatment.

Finally, we must not overlook the fact, that some of the so-called scrofulous or tuberculous tumours of the mamma, result more from some forms of chronic inflammation in lymphatic women, than from any peculiar morbid process.

§ 8. OSTEOID, OSSEOUS OR CALCAREOUS TUMOURS.—The mammary region may be the seat of various osteoid, or calcareous productions. I shall refer again, in treating of milk-tumours, "Galactocele," to some examples of concretions, or calculi, met with in the breasts of women, or in the lower animals. Without mentioning the observations of Rufus, Levinius, and Lemnius, which are quoted by several authors, I may observe that Bassius, who is spoken of by Morgagni, states that he saw a widow, who had several stones in her breast, which, by their friction, produced a kind of rattling, which was audible when the patient walked, or struck her breast. Besides these concretions, which are analogous to those developed in the salivary organs, chalky, calcareous, or osteo-calcareous formations, have been met with, and I myself have several times seen them in the breast, consequent on abscess or prolonged inflammation. Such productions, following on purulent, lactiferous, or hemorrhagic formations do not, however, constitute exactly what we mean in surgery by osteoid, or bony tumours of the mamma; the latter have only been rarely met with; yet some remarkable cases have been preserved.

A. Cooper quotes a case, in which a tumour of this kind had existed for fourteen years, and was the seat of severe pain, especially at the time of menstruation. It produced so unpleasant a degree of heat, that the patient, a young girl, otherwise in good health, was obliged to have recourse to refrigerant lotions. The author indeed says, that one part of the tumour was cartilagenous, whilst the other was osseous; but he does not enter into sufficiently precise details for us to be quite certain whether the case was one of true osteoid tumour, or of calcareous concretion. The tumour was dissected out, and the young person soon got well; only it is uncertain whether the disease was recognised before the operation.[1]

[1 I have not succeeded in tracing the preparation here referred to, and do not know

In a woman of whom Morgagni speaks, the tumour had existed for thirty years, either in the form of lumps, or of scattered tubercles. Towards the inferior part of the breast, it formed an irregular mass, giving rise to pain, which induced a suspicion of cancer. One of the projections having been opened, the surgeon was enabled to extract a bony, irregular fragment, the size of a hazel nut; but here, even more than in A. Cooper's case, it may be questioned whether this body was really of osseous nature.

Still more strange cases have been recounted by Bonnet, Morgagni, and Wolf. If we are to believe these authors, ossification has involved the whole breast. A. Bérard has narrated, in his Thesis, a not less remarkable case. It was as follows:—A nun, who was a prey to great depression and melancholy, dragged out a most painful existence, in consequence of the difficulty she found in breathing. She was incessantly tormented with the fear of cancer of the breast. Her mammæ were so much indurated that to the touch they had the hardness of stones. The integuments of the chest were stretched so as to look like the hoops of a cask. No kind of treatment had any influence on this condition, and eventually it produced the death of the patient. The examination of the body was commenced by dividing the integuments parallel to the sternum, from the clavicles to the xiphoid cartilage. The skin retracted on each side like the cord of a tense arc, and the sternum was thus considerably exposed. When separated from the body, the tumour represented a completely osseous hemisphere, which was so hard as to resist the action of a good knife. It adhered so intimately to the skin, that it could not by any means be separated from it.[1]

If this case, which is destitute of essential details, which one is surprised to find wanting, be really one of Bérard's own, and not an old case, the author of which he had inadvertently omitted to point out, it will form the most interesting of all those hitherto published. But it is not even mentioned whether one only or both the mammæ were affected at the same time; and further, what proof is there that the tumour was really osseous? What

whether it is now in existence. Sir Astley's words, however, are: "Upon examination of the swelling, after its removal, the larger portion of it had the appearance of that cartilage which supplies the place of bone in the young subject: the remaining part was ossific." The drawing given of it has every appearance of a cartilaginous tumour, in which case the ossific matter was probably true bone.—Ed.]

[1] A. Bérard; 'On the differential Diagnosis of Tumours of the Breast,' p. 87, Paris, 1842.

change had taken place in the skin to permit of its girding the chest in this way? If we allow for a little exaggeration and hyperbole in the narrative, the picture is even more applicable to scirrhus, "*en masse*," or to stony cancer, "*en cuirasse*," (tegumentary,) of which I shall have to speak further on, than to an osseous transformation.

However that may be, I have met with several varieties of osteoid tumour in the breast. I shall have occasion to describe a cyst whose boundaries were transformed into a shell of bone, or bone-like structure. In other cases the mamma appeared as if it were traversed by plates or septa, or very fine osteo-calcareous needles. In two other patients, osteoid productions, brittle as glass, seemed to occupy the interior of the milk-tubes. Usually they have seemed to me to be situated in the interlobular septa of the breast. I have met with them also in the substance of some varieties of scirrhus.

The origin and cause of osteoid tumours in the breast is both various and obscure. There is nothing more simple than that at the termination of purulent or tuberculous abscess, or at the root of a milk or sanguineous cyst, a calculus, or stony, or ossific formation should make its appearance. But what, on the other hand, is the mechanism of the formation of those osseous masses of which Bidloo speaks, or of the shells, layers, septa, and spiculæ, that I have described.

In these cases, though the tumours have not been preceded by any lesion or perceptible alteration, it is very probable that they have originated in some other disease of the breast, and are only an effect or termination of some change of an entirely different kind. It must, however, be understood, that I do not refer to those bony tumours which sometimes result from the calcareous or cretaceous transformation of fibrous or fibrinous tumours of the mamma.

When uncomplicated, osseous and osteoid tumours hardly constitute a serious disease. Their development usually ceases before they have acquired any large size, but as they may prove the source of perpetual irritation to the neighbouring parts, they may cause unceasing pain, or some new affection, as occurred in the cases described by A. Cooper. When occurring in combination with other kinds of tumour, they change neither the prognosis nor the treatment of the principal disease. The therapeutical indications are extremely simple, being reduced to the sole alter-

native of extirpation, or of leaving them alone. In fact, of what use can either external or internal remedies prove? Extirpation is easy and certain, if the tumours are round, moveable, and well defined, but we ought to think twice before interfering surgically with those cases in which they are radii, septa, or irregular, badly circumscribed, osteophite layers. In this variety, it is better to advise the patient to keep quiet, and abstain from undergoing any operation, at least if the tumour be unaccompanied by acute and permanent suffering. The operation is not without danger, when we are obliged at the same time to extirpate both the osteophites and the portion of the mammary gland affected with them.

There is, however, this advantage in extirpating these tumours, that we need have no fears of their return, on the condition always that the whole of the degenerated parts have been removed.

§ 9. TUMOURS FORMED OF MILK, OR GALACTOCELE.—The name *lactiferous* is applied to tumours formed of milk, or by some of its constituents, accumulated either in the natural ducts of the gland, or amidst the organic structures of the mammary region. This class of tumours, of which but few examples have been published, had never received any special description until I wrote a short account of it in 1838. Since then, one case alone seems to have occurred in the Parisian hospitals. M. A. Forget, who published an account of it, seemingly without being aware of what I had done, has not, however, arrived at the same conclusions as myself upon various points. Galactocele is, notwithstanding, hardly so rare a form of mammary tumour as one would be inclined to believe, from the few examples that have been related. It has frequently been confounded with tumours of an entirely different nature. It occurs in several forms; as swellings that may be acute, chronic, liquid, solid, inflammatory, indolent, temporary, or permanent.

Milk, which is naturally prone to changes, and susceptible of all sorts of transformations, may more readily, perhaps, than any other secretion, give rise to various local maladies. As I have treated of lactiferous engorgement and inflammation occurring in recently confined or suckling women in a preceding chapter, I shall here confine myself to tumours without inflammation. Cases occurring under my own observation have shown me that these

tumours may exist in the breast, in the condition of infiltration, as simple or multiple cysts, and as solid masses, either caseous or butyrous.

A. *Galactocele from Infiltration.*—I have only once seen galactocele from infiltration occurring long after confinement, and that was in the year 1838, in the person of a woman, aged thirty-four, who had been confined for fifteen months, and had ceased to suckle for six weeks. The right mamma, which was nearly double the natural size, suggested the idea of a spongy hemisphere, and had been sensitive and painful for some days. The skin was rather more shining than on the other side, but not red, and the whole region was notably thickened. An exploratory incision gave exit to a considerable quantity of milk, which plainly escaped from the cellular tissue; general bleeding, a couple of purges, baths, and emollient topical applications got rid of the engorgement in the course of a fortnight. Such cases, however, appertain, in almost all points, to the lactiferous engorgements spoken of elsewhere.

B. *Liquid Galactocele, or Lactiferous Cysts.*—Cysts filled with milk are the usual form of galactocele met with in the mamma, at least they are those which alone have attracted notice. They are characterised by a tumour of variable size, soft, indolent, and fluctuating, giving the idea of a somewhat flask-shaped pouch, dependent or lumpy, which has arisen without previous inflammatory symptoms. The oldest case of the sort on record occurred to Scarpa, and is the only one mentioned by Boyer.

Case 1.—"A countrywoman, æt. 20 (says Scarpa), ten days after her second confinement, perceived a swelling in the left axilla. By degrees the tumefaction increased, and occupied the whole breast, which became so much elongated, as to hang down to the left thigh. A puncture made near the axilla, with a trocar, gave exit to nearly ten pounds of pure milk. An incision, rather more than an inch in length, was immediately practised, with the intention of passing a seton along the cyst, and the patient eventually recovered."

In this case the tumour was of enormous size, and Scarpa took the precaution to assure himself, by chemical examination, that

the fluid was really milk. The second case of the kind was published by A. Cooper.

Case II.—A patient, æt. 28, presented herself with the right breast affected with a tumour, which appeared one month after confinement. A lancet puncture gave exit to five ounces of a blueish coagulum, mixed with a certain quantity of yellow serum. The flow of liquid ceased at the end of some days. The patient attributed the formation of the tumour to a blow on the mamma.[1]

Dupuytren seems to have met with some cases of lactiferous cysts, and Mr. South has mentioned another in his edition of 'Chelius.'[2]

Case III.—A young woman, who had suckled for fifteen months, noticed the growth of a tumour in her right breast six or seven months after her accouchement. Lactation having terminated, she applied at the Hôtel Dieu to have the tumour removed, as it caused her much uneasiness. The bulk of the tumour was situated beneath the nipple. It was the size of a small hen's egg, hard, elastic, moveable, and without change in the colour of the skin; Dupuytren made an incision two and a half inches long into it, and there came out fluid like cream, yellow and inodorous, which, on chemical analysis, was found to contain caseine and butyraceous matter. The cyst, which was irregular, with granulations in its interior, adhered intimately to the neighbouring tissues. Suppuration was kept up by means of dressing with charpie.

In M. Forget's case,[3] there was a milk-cyst developed in a woman, æt. 29, whose last confinement occurred two months before. The tumour, which was composed of a large cyst, and of some secondary lumps, had arisen insensibly, and without pain. M. Jobert made an incision into it, in the hospital of St. Louis, and having given exit to a considerable quantity of liquid exactly resembling milk, proceeded to remove the cyst; abundant suppuration followed, and the woman eventually got well.

In these different cases, the milk was accumulated in a sac, an dformed a permanent tumour. There are others in which the

[1] Op. cit., p. 500. [2] Birkett, pp. 201-3.
[3] 'Bulletin. Gén. de Therap.,' No. 44.

galactocele seems only to have been a temporary tumour. Thus, in the case of a woman, recorded by Siébold, two milk-cysts existed near the axilla, one on each side, during pregnancy. Covered with wrinkled skin, and having the aspect of the flesh of a chicken, these tumours, on being squeezed, gave exit to genuine milk. After the confinement, the exudation ceased by degrees, and the swellings were not long in disappearing themselves.[1]

In another case, related by Moor, and in a third related by Mr. Lee, and in a fourth, which occurred to Mr. Stanley, the galactocele, whether dependent on a supernumerary gland, or formed in any other way, existed in the axilla, and in like manner disappeared without active interference.[2]

These few cases show that the fluid contained in the galactocele is not always of the same consistence. It was in the condition of pure milk in Scarpa's patient; it was curdy and serous in A. Cooper's; like cream in Dupuytren's case; and pure milk in the cyst operated on by M. Jobert. As for the axillary tumours which were not opened, there is every indication that they contained milk in the natural condition.

The question arises, what kind of change may this fluid undergo? Dupuytren, who states, that he had met with petrified concretions and milk-stones in the cysts, and who possessed a collection of milk-stones from female animals, also mentions a case in which the cyst contained matters analogous to adipocere.[3]

c. *Solid or Concrete Galactocele.*—Besides cysts filled with milk, we meet with solid tumours, the constituents of which belong to this fluid, as in the following instance:

Case 1.—A female, about 40 years of age, of small stature, and otherwise in good health, who had suckled several children, was admitted under my care, in La Charité, in the month of December, 1837. She had a tumour, the size of the two fists, in the right breast: it was lumpy, projecting, indolent, hard, and of a consistence between a fibrous and an encephaloid tumour, which had not yet become softened; it was moveable, destitute of redness, or other inflammatory symptom, although enveloped in

[1] 'L'Expérience,' vol. i, p. 614.

[2] Ibid., vol. ii, pp. 234-336.

[3] 'Journal Hebdomadaire,' 1829, vol. iv, p. 229.

very thin skin, and had originated eight months before on the occasion of the last lactation, and subsequent to slight engorgement of the breast.

Discovering in it neither the characters of schirrous or cerebriform cancer, nor of cysts, or any other known tumour of the breast, I asked myself whether it was not, perhaps, formed by milk which had become hardened. The sort of thickening felt in it, when some of its principal lobes were pressed between the fingers, strengthened this opinion. The general and local measures which had already been employed in vain, made me unwilling to have recourse to them again, the more so, as the patient was herself desirous of having the tumour removed.

After the operation, we were enabled to ascertain, by dissection, that the tumour was made up of two different tissues:

1st. Of pellets and granules, which were yellowish, homogeneous, firm, and without organic basis, could be crushed under the finger, and exactly resembled cheese or butter which had been highly dried.

2d. Of an envelope, in which we found the mammary tissue displayed, spread out, and mechanically altered, together with fibro-cellular tissue in the shape of a large cyst, the interior of which subdivided by septa and lamellæ of the same kind, resembled a sac with large cavities, in which were contained globules of butyraceous matter.

Struck with these appearances, I requested M. Donné, who even at that period had successfully applied the microscope to the study of morbid products, to examine the tumour, and he furnished me with the following note:

"The material you sent me, looked like a sort of coagulated casein. Under the microscope, it seemed to be formed of a multitude of globules analogous to those of milk; like them, soluble in ether and alcohol, and insoluble in ammonia. They were mixed up with globules of mucus and granular corpuscles characteristic of colostrum. The gland itself, when pressed, furnished similar globules; and water agitated with the matter, became white, like milk, and was found to contain similar globules."

The operation, which presented no peculiarity, was at first followed by satisfactory results. The wound suppurated only moderately at first, and retracted to the extent of four fifths in the space of twenty days. Encouraged by the characters of the tumour previously mentioned, I looked for a rapid and complete

cure; unfortunately, however, things did not progress so favorably. Although the tumour, which had been removed, was everywhere surrounded with natural maltered tissue, it commenced to return at the end of a month, even before the wound had completely cicatrized. A lump similar to that which had been excised first appeared above the cicatrix; and rather later, others, also on the outer side, near the axilla. The rest of the gland suffered in its turn, and the disease reappeared under the cicatrix, and over the whole circumference of the wound. The development of the new tumours was so rapid, that in less than four months, they formed a mass the size of a child's head. Their separate lobules, which were entire in some parts, and extensively ulcerated in others, had some of them the aspect of encephaloid mushrooms, and others, of lumps of cheese, which, however, it would have been difficult to distinguish from cerebriform tumours, if it had not been for the existence here and there of genuine lumps of cheese, easily distinguishable, and readily separated.

This was, indeed, a most strange circumstance. Observing that the disease reproduced itself like a cancer, without losing the characters of caseous or butyraceous matter, I found myself in extreme perplexity respecting it. By detaching some of the fungus-looking lumps, which projected the most externally, I was enabled to remove large masses, some resembling a Dutch cheese, and others like rather firm butter, without the employment of cutting instruments, or causing any loss of blood. These fragments, which precisely resembled the former tumour, were sent to M. Donné, who neither in this instance, nor in the other, was informed whence the matter came, nor of the opinion which I had formed of its nature. He discovered not only globules and granular corpuscles, but, moreover, casein, and all the other constituents of milk. A glance, in fact, at the lumps extracted from the tumour, was enough to convince any one that they were really lactiferous concretions formed of milk, which had long been coagulated.

The patient, nevertheless, continued to get worse and worse. Extensive suppuration, ichorous and unhealthy, gradually wore her out. Most of the lumps composing the tumour ulcerated, and subsequently spontaneously detached themselves; and the digestive functions speedily became involved, colliquative diarrhœa supervened, and death closed the work of destruction six months after the operation.

The case just concluded was the first of the kind I had met with, up to the year 1838; since then, another has come under my observation at the hospital. Possibly Dupuytren referred to something of the same sort, when he spoke of mammary tumours formed by milk transformed into adipocere.

Case II.—"Seven or eight years ago (says Paillard), Professor Dupuytren was consulted respecting a female, about forty years old, who had a tumour of considerable size in the breast. On pressure, it retained the marks of the finger. The diagnosis was most embarrassing; however, an incision was made into it, and the tumour opened. It turned out to be a cyst, filled with matter, exactly resembling adipocere, of which it had all the physical and chemical characters."[1]

The report tells no more. The word *adipocere*, makes the case still more obscure, especially considering that those tumours and materials, which are met with in other parts of the body to which the term can properly be applied, are of a kind altogether unlike milk.

Case III.—*Butyrous tumour of the left breast, of fourteen months' duration, the size of a hazel nut, in a double sac, pretty hard, like a fibrous tumour, not irregular or adherent to the skin, which was normal, and very distinct from the mammary tissue; extirpation; cicatrization complete when the patient went out, twenty days after the operation. Pathological anatomy—Tumour formed of lobules with thin walls, which being cut into, gave exit to a white, soft matter, like cheese and cream; under the microscope were found milky and buttery constituents, and crystals of margarine; one of the milk-tubes opened into a lobule.*—Maria Thuillier, æt. 25, a lace-maker, blond and lymphatic, of delicate strumous constitution, has been married two years, and has a child nine months old. Fourteen months ago, she received a slight blow from the elbow on the left breast, to which she paid no attention. Four or five months after her confinement, that is four or five months from the present time, a little swelling appeared below the nipple, which gradually increased in size, and caused at times acute pain, a sort of mammary neuralgia.

July 28th, 1848.—At the present time, the tumour is situated

[1] 'Journal Hebdomadaire,' 1829, vol. iv, p. 229.

at the upper and internal part of the left nipple, and is the size of a hazel nut.

Its long diameter is transverse, it is not adherent to the skin, and gives the notion of a tumour in a double sac or sort of gourd. Its hardness is considerable, so that it has been pronounced fibrous. Its surface is not irregular, and the skin covering it is neither vascular nor unnaturally coloured. There is pain in both breasts, not confined to the tumour.

August 1st.—The part was excised, the patient having been placed under the influence of chloroform. In a month, she had perfectly recovered.

Pathological Anatomy.—The tumour was formed of lobules with thin walls, and when cut into gave exit to a white, soft matter, like cream cheese. The microscope revealed the presence of the elements of milk and butter, crystals of margarine, and a milk-tube opening into one of the lobules. On chemical analysis, M. Quévenne discovered the principal constituents of milk and butter; but did not push his researches far enough to determine the presence of them all.

In short, this tumour was one of those which may be called butyrous, which occurring in recently confined women, are formed by extravasated milk, which undergoes considerable changes.

M. Lebert has sent me the following microscopic examination of the tumour:

"The tumour, the size of a pigeon's egg, is composed of mammary tissue, and fluctuating cysts, the largest of which, capable of containing a hazel nut, is of a dull yellow colour, slightly brown on the surface. The layers of the adipose tissue cover the superficies of the tumour in several places.

"The principal cyst is filled with a semi-liquid substance, of exactly the consistence of cream cheese, of a greyish-white colour, perfectly homogeneous, and capable of being uniformly spread over a plane surface. The microscope recognises, as the principal constituent, fat in different forms; as granules, small vesicles, masses, and irregular granular collections. In addition, there are a great number of crystalloid spiculæ, either single or grouped in bundles, which resemble the needle-like crystals of margarine; with this difference, however, that their extremities are truncated, whilst they are finely pointed in margarine.

"When the cyst is emptied of the greater portion of its contents, it is seen to consist of several small collateral cavities.

Its internal surface is of a reddish yellow, of slight vascularity, and formed of fibro-cellular tissue. No epithelial scales are met with here, or in any portion of the tumour; nor are there crystals of cholesterine, such as so frequently exist in atheromatous tumours, to which the principal cyst presents the greatest resemblance in its external aspects.

"On stripping the external surface of the tumour of the cellular and adipose tissue covering it, there are observable at the extremity of the principal cyst four or five rounded prominences of a lobular aspect, somewhat resembling the edges of an oak leaf. Each of them is about the size of a pea; their bases are large, although their anterior extremities are narrow, and one of them we were enabled to follow out to a milk-tube, about the $\frac{1}{28}$th of an inch in size. On opening one of these lobules, which was of a pale yellow colour, we came upon a substance of the same colour, which presented all the physical and microscopic characters of butter. The other lobuli inclosed a precisely similar substance, but more in the condition of infiltration, than as forming casts of the interior of a cavity. Finally, it was observed, that the tissue which surrounded the cyst, and the lobules filled with the buttery substance, was the normal mammary tissue with predominance of fibrous substance; the primitive glandular lobules found on making very thin slices, were at least $\frac{1}{520}$th of an inch in their primary vesiculi, and in their interior was the same epithelium which is often met with in mammary hypertrophy."

D. *Formation of Milk-tumours.*—As before remarked, there is nothing surprising in the formation of milk-tumours in the breast. Some irritation of the mammary tissue may cause the milk to become infiltrated out of its natural passages, and thus give rise to morbid collections. Some mechanical or pathological obstacle may, on the other hand, cause it to be retained in some of its proper tubes. In the one case, as in the other, the greater part of the observations relating to hæmatoceles, are applicable to galactoceles. It is, in fact, impossible, after the preceding cases, to deny that the milk may escape from its tubes, either by simple transudation, or in consequence of some rupture, and infiltrate itself into the cellulo-fibrous or fatty tissue, as occurs in the case of the blood consequent on contusions or ruptures.

In this last form of the disease, the breast is as if it were saturated with milk or milky serum, and its resolution is doubtless

neither more difficult nor more tedious than the cases of infiltration of blood. Still although the milk is but slightly irritating, and rapidly absorbed, these infiltrations are, nevertheless, less simple than those of blood.

The mammary gland, continuing its functions, perpetually furnishes new materials for infiltration, and thus the disease is reproduced on the one hand, as rapidly as it is cured on the other. Moreover, we can only succeed in getting rid of galactocele by measures which have for their object the arrest of the secretion of milk; but since the function of the breast is not always easily stopped, the consequence is that a collection of milk, or regular cyst, sometimes follows simple infiltration.

Neither is it indispensable for the milk to escape from the natural passages in order to form a collection. In the acute state, as has already been shown (lactiferous engorgement in nursing women), the milk, retained in its natural canals, may dilate them here and there, so as to give to the breast a markedly lumpy aspect; and in the chronic condition, the dilatation may be carried to the point of transforming the simple milk-tubes into cysts of considerable dimensions. Observers, on noticing the milk issuing in drops from one or more openings at the base of the lactiferous cysts, have naturally thought that they had before them sacs formed of, or dependent on, some of the excretory tubes of the mammary gland. The formation of the sac, in such cases, is, in all points, comparable with what takes place in salivary tumours, and does not seem to me more difficult to understand. The careful dissections instituted by M. Forget, can, I believe, leave not the slightest doubt of the reality of this sort of dilatation.

In a sac, formed at the expense of the neighbouring tissues, or in a cavity resulting from the dilatation of its proper canals, the effused and accumulated milk is subject to certain changes like to blood when placed under similar circumstances. Thus it may:

1st. Remain as a collection which is but slightly painful, without undergoing any marked change; as was the case, for instance, in a patient of Scarpa's, and in a case of M. Forget's.

2d. It may decompose and be replaced by a liquid purely serous, or by a mixture of serum and caseine, as in a patient of A. Cooper's; or else, if the serous part be absorbed, it may become thick and creamy, like one of the cases of Dupuytren.

3d. It may inflame and transform the tumour into a true milk-abscess, which, after remaining in an indolent condition for a long

period, from that moment has the progress and character of an acute abscess.

4th. It may give rise to concretions, to granules susceptible of assuming various forms and appearances, so as to engender the idea of milk-stones.

5th. It may become harder and harder, as does the coagulum or the fibrine of the blood in hæmatocele, and constitute the origin of tumours which are evidently either butyrous or caseous, as was seen in my own cases.

By associating together, in imagination, some of these varieties of galactocele, and uniting several of them in various proportions, it is easy to take account of all the species that can present themselves in practice.

D. *Differential Diagnosis of Milk-tumours.*—As the diagnostic characters which distinguish lactiferous engorgement from acute inflammation or abscess have been pointed out in a preceding chapter, it is unnecessary to recur to them here.

Lactiferous tumours, properly so called, besides being readily confounded with tumours of a different nature, exhibit varieties amongst themselves which it is not always easy to distinguish.

In the condition of chronic infiltration, galactocele is a rare disease, which may be confounded with simple œdema of the breast; but as it can only occur in women whose period of suckling has not terminated, and as it may exist without previous disease, or appreciable lesion in the neighbouring organs, and without inflammatory action, whilst œdema is, in fact, but the shadow or symptom of some other disease still more severe, an experienced surgeon can scarcely find the differential diagnosis of galactocele and lactiferous inflammation very difficult.

Milk-cysts differ from chronic abscess, in the circumstance that the latter have a large base, more or less indurated or thickened, and are rarely destitute of pain. Whether symptomatic abscesses proceed from the chest, the axilla, or the neck, or depend on some lesion in the cartilages or ribs, they are generally coincident with some special characteristic, which, without difficulty, sets aside the idea of a milk-tumour.

So much for serous, sanguineous and mucilaginous cysts, &c.; but galactocele is usually soft, somewhat flask-shaped, and contained in an irregular sac, the skin of which is chafed or withered; and sometimes it discharges, either by transudation, or by little

fistulous holes, a fluid which speedily removes all doubts as to its nature.

Certain bloody or serous formations, consequent on external violence, may prove embarrassing; but the origin of the disease, the existence of external violence in the one case, and of lactation in the other, are sufficient to prevent mistake.

It should be mentioned, also, that the different kinds of lactiferous tumours, and galactocele by infiltration especially, often present in some parts a degree of thickening which becomes almost a pathognomonic sign.

The most difficult thing, without doubt, is to distinguish, at first sight, butyrous tumours of some standing from any other tumour of the breast. The recorded cases of this variety are not sufficiently numerous to enable us at the present moment to point out its signs with precision.

The case which occurred to Dupuytren left the mind of that great surgeon in doubt.

In the patient who was under my care, there was every indication of encephaloid; but the form of the tumour, its reddish or violet colour, and the softness of some portions of it, distinguished it both from scirrhous and mammary induration, as well as from colloid. However, its indolence, its rapid development after prolonged lactation, the entire want of elasticity or fluctuation in its different lobes, a sort of thickening, almost undefinable, of its whole mass, or of some of its principal portions, led me to assert that the case was one of milky concretion, with caseous or butyrous transformation. However, the diagnosis which I formed might, I admit, have left some uncertainty in the minds of men of very cautious habits. The return of the disease, and the almost incontestibly cancerous characters which it assumed towards the termination, are circumstances to arrest our conclusions, and prevent our pronouncing absolutely on the subject. In short, the tumour was either of cerebriform nature and not butyrous, or else caseous and butyrous concretions are susceptible of undergoing the cancerous transformation. However, this double conclusion, from which it seems to me impossible to escape, trenches on pathological questions of too delicate a kind to allow of our judging them lightly. The opportunity of carefully discussing them will occur in speaking of malignant tumours.

Treatment.—The treatment of lactiferous tumours must necessarily vary, according as they are acute or chronic, recent or of

long standing, liquid or solid. Having no occasion to return to lactiferous engorgement, to acute milk-tumours, I shall pass at once to the examination of those measures which we may employ in cases of chronic galactocele.

As the source of these tumours is found in the functions of the gland during lactation, it is necessary, above all things, to endeavour to stop the secretion of milk : it is evident, at first sight, that purely local treatment, remedies applied merely to the tumour, must prove ineffectual. We must commence by remedies directed against the secretion of milk, that is to say, by purgatives, alkaline baths, general bleeding, preparations of iodine, and a vegetable diet. If the case be one of simple infiltration, topical astringents, ammoniated liniments, poultices sprinkled with vinegar, sal ammoniac, or sea salt, in addition to the constitutional treatment, are almost always sufficient.

In the case of cysts, we can rarely do without surgical operation. I do not know how far we can reckon, in such cases, on the use of soap plaster, hemlock plaster, the Emplast. de Vigo, or on iodide of lead, or mercurial or iodide of potassium ointments, or on repeated blisters. The nature of the fluid, and of the cysts themselves, would lead me to think that such measures can rarely succeed. The idea of treating galactocele, like a hydrocele, must have early presented itself to the mind. It would even seem that in association with general treatment, after having dried up the mammary secretion, it should be enough to empty the cyst by simple puncture, in order to obtain a radical cure. Hitherto, however, the facts have been the other way. Galactoceles treated in this manner have speedily become filled again, and no cure of the kind has been obtained. It seems, therefore, important not to delude one's self, as to the value of such treatment. Is puncture, followed by irritating injections, of more value ? Hoping all things from it, and recommending that a trial should be given to it, I am, nevertheless, unable to affirm that it will succeed, as in the case of a hydrocele. The investigations that I have made into the effect of medicated injections into closed cavities, have demonstrated that irritating injections are only efficacious when they are applied to cavities which are *bona fide* serous. Now, the interior of a galactocele is more like a mucous than a serous surface. Moreover, milk is a greasy, fatty product, very different from the serum contained in hydroceles. Injections of iodine, for instance, and it is the same thing, according to all appearances, with injections of wine, are far

from as constantly succeeding in the case of cysts with villous or mucous cavities as in smooth or serous ones. I should, therefore, not be at all surprised to find that, in galactocele, they are sometimes inefficacious. Still, however, as they may succeed, I should not hesitate to try them. Supposing that the orifices of some of the milk-tubes opened into the galactocele, and that the medicated fluid managed to penetrate into them, I do not see that there would be any room for alarm. The inflammation set up by iodine diluted with water is usually so moderate, and produces suppuration with so much difficulty, that there is nothing in such a possibility to alarm the practitioner.

The following is an account of a case which seems to justify the preceding remarks:

Case.—*Pendulous galactocele, arising during pregnancy.*—A woman, æt. 33, came into the Hôtel Dieu, at Lyons, with a pendulous milk-cyst, the size of the head of a new-born child. The cyst, which had arisen during pregnancy, was twice injected with iodine, and once with a solution of nitrate of silver, without avail. It was only cured by means of a seton, and cauterization.[1]

If the employment of injections remain useless, or if for any other reason we do not choose to have recourse to them, the surgeon has still the choice of caustics, large incision, seton, or extirpation. Caustics are too slow in action, and too uncertain in effect. They can only succeed by opening into the tumour, and causing it to suppurate. Now incision, or a seton which fulfils the same indication, are of very easy employment, and attended with too little danger for us not to prefer them. Rather a large seton is best for large cysts, and an incision of some extent for cysts of moderate size. In the one case as in the other, it is necessary for the whole interior of the galactocele to suppurate, and for its cavity, no longer distended by the fluid, to retract, and become reduced to a sort of sinus or fistula. Afterwards, it is sufficient to keep the lower opening patulous, by means of a thread, so that it may close finally from the interior towards the exterior.

I can hardly admit, then, that it may sometimes become necessary to extirpate the galactocele entirely. It is a serious, difficult, tedious, and painful operation, which can have no other termina-

[1] 'Gazette Médicale de Lyon,' Jan. 15th, 1850, p. 9.

tion than that produced by the seton, or by simple incision. If the tissues are very much relaxed and elongated, there is the opportunity of excising a strip of the free portion of the cyst, of greater or less extent, but this is with the sole object of relieving the part of too large a portion of integument.

Incisions of considerable extent are absolutely necessary when, besides liquid matters or serum, the galactocele contains either floeculent, caseous masses or stony concretions, or lumps of adipocere, for all such masses and foreign bodies must be carefully removed from the swelling.

In the case of hard butyrous or caseous tumours, the measures referred to evidently will no longer be sufficient. If there be only one single lump, it is presumable that we can enucleate it by a simple opening into the cyst, and thus relieve the patient by means of a slight operation. If there be only two, three, or four lumps, isolated from each other, by as many septa, we have still the chance of succeeding by freely opening each of the lumps; but when a large portion of the breast is affected, as was the case in the patient I spoke of, where the different cheesy lumps are in some measure fitted into the glandular structure, and when the morbid product is at the same time infiltrated into the substance of the tissues, its extraction by means of simple enucleation will no longer succeed. Extirpation is then indicated, in the same way as it is practised in cases of malignant tumours, which will be considered further on.

Believing that butyrous tumours were of innocent nature, I in that instance thought that it was useless to carry the incisions far beyond the limits of the tumour. However, the return of the disease, although there was no appearance at the time of any morbid tissue remaining behind, has placed me in great perplexity on this subject. At the present time I am inclined to inquire, whether it would not be preferable to proceed, in such circumstances, to the ablation of the entire gland, rather than to the mere removal of the tumour. If the one be much less troublesome and painful, the other is evidently surer and more prudent. It is, however, a question which experience and the future can alone decide.

Perhaps I could, or even ought to have treated of fluid galactocele in the chapter on cysts of the breast; for this class of tumours, in fact, forms one of the most distinct species of cysts that it is possible to establish. Still, as whether fluid or solid, the matters contained in lactiferous tumours are evidently of the same nature, it has

appeared to me that simple differences, in the degree of fluidity, are not sufficient to warrant my placing such tumours in entirely distinct chapters. Moreover, I do not believe that the reader will have any occasion to regret such a breach of the logical order of classification : it will be easy for him to refer to what has been said of galactocele when he is engaged in the consideration of the chapter on the different cysts.

§ 10. CYSTS OF THE MAMMARY REGION.—Hardly any description has been given of fluid tumours, except that of A. Cooper and Dr. Warren, under the title of *hydatids of the breast*. Nevertheless, I have met with a considerable number of varieties of cysts in this situation, all very different from hydatids. Without mentioning the galactoceles just described, I have to speak of sero-sanguineous, mucilaginous, and sero-mucous cysts. Sebaceous cysts also may be developed here, so as to simulate other kinds of tumours. The following is a remarkable case of the kind :

A. *Sebaceous Cysts.*

CASE I.—*Sebaceous* (*mélicerique*) *cyst of the breast.*—Valois, æt. 43, married. There was nothing remarkable in the history of this person's family. She seemed pretty strong, and possessed a good constitution. She was a brunette, had generally enjoyed good health, menstruated regularly, and had had four children, the second of whom was dead. She had suckled two of her children. Her tumour was of fifteen years' date. It appeared four years after the first child, and was at first as large as a hazel nut. The patient neither nursed the first nor the last of her children. Since she suckled, that is to say, since her second and third pregnancy, the tumour has much increased. Until then, it was quite flat, but during the last eighteen months it has increased considerably.

Present condition.—The left breast rather larger than the right, is without change in the colour of the skin, and presents a prominence at its lower and outer portion. This has become soft during the last six months. On touch, a well-defined tumour is discovered, which is irregular, in that situation where it is continuous with the tissue of the mammary gland. It is moveable over the great pectoral muscle, soft, and fluctuating, and as large as a hen's egg. During the last six months only has it become

the seat of shooting pain, which the patient compares to the pricking of a needle. There is no ganglionic enlargement in the axilla.

January 30th, 1850.—The tumour was punctured with a flat and very fine trocar, and there issued forth, with difficulty, white serum in small quantity, and some white clots.

31st.—There was very slight inflammation around the puncture.

February 3d.—M. Gerdy removed the tumour.

Pathology.—At the circumference of the part, and especially towards its upper end, there are some portions of fat-tissue. The cyst, for the tumour is a sebaceous cyst, has a white fibrous envelope. This presents externally traces of cellular tissue, which unites it to the neighbouring parts. Some vascular networks are also met with, but they can be completely removed. In the interior were found:

1st. Superficially, small whitish layers, soft, imbricated, placed side by side, and thus seeming to form a second layer, or second envelope.

2d. Besides this, there was nothing but a less white material of a greyish blue colour, resembling a sort of pulp or pap, disengaging a nauseous, unpleasant, odour, of the most disagreeable kind; and in one word, bearing the greatest analogy to the matter of meliceris.

Microscopical examination.—The external envelope exhibits only fibrous tissue. The little whitish lamellæ within it are composed only of epithelial cells. The matter contained in the cyst exhibits, under the field of the microscope, merely crystals of cholesterine, cells of pavement epithelium, and fat-globules.

This case is narrated in the thesis of M. Guyot, and I know of no other example of the kind, and doubt if there be any other on record.[1]

[1] This case of sebaceous cyst, though rare, is certainly not unique. In the Museum of St. Bartholomew's Hospital a fine specimen of the kind is preserved. The cyst lay deep within or behind the mammary gland. It was of nearly spherical shape, thin-walled, and loosely connected with the adjacent parts; its inner surface was smooth, polished, and pale brownish in colour. It contained about three ounces of a creamy, pale, fawn-coloured liquid, with small, white, spermaceti-like particles floating in it, like the fluid contents of certain sebaceous cysts. The tumour was removed by Mr. Lawrence, and microscopically examined by Mr. Paget, who entertained no doubt of its nature. The most remarkable point about it is perhaps its situation, but it is well known that the

B. *Hydatids.*—Let us premise that it is not clear that all the tumours described under the title of hydatid tumours were really formed by hydatids. The drawings of them, which have been preserved by their authors, give rise to grave doubts on the subject.

Hydatids of the breast are, according to A. Cooper, non-cancerous maladies, capable of attaining an enormous size, which, sometimes solid, sometimes moveable and pendulous, contain serum of rather gummy character, with an interior of a cellular aspect, occasionally filled with genuine hydatids. The author adds to this description, the account of a tumour nine pounds in weight.

Dr. Warren[1] cites a case of a tumour of this kind, which weighed twelve or thirteen pounds, and contained an infinity of small globular hydatids. According to Cooper, when these tumours have once been emptied, they only fill again slowly, and sometimes, indeed, do not fill again at all. In other cases, there results from their being opened fistulous sinuses difficult to heal, so that, if they are of a certain size, extirpation affords the best, and perhaps the only remedy. For my part, it seems to me, that in this description are included several kinds of cysts, which he has failed to appreciate, and to distinguish. If it be possible, perhaps even certain, that A. Cooper and Dr. Warren have really met with hydatid tumours, there is nothing to prove that they have not mistaken, more than once, simple cysts for tumours of the kind. Such a supposition, which the vagueness of their description authorises, is moreover supported by an observation which they have not neglected to make. How is it that two surgeons of such extensive practice and long experience, have never met with cysts of the breast properly so called, and that according to them hydatid tumours do not constitute a rare disease, whilst I, who have never met with genuine hydatids in the breast, have observed a considerable number of different sorts of cysts ?

sebaceous ducts become elongated and dragged down from the skin when they have become obstructed and the subject of fresh growth.

Mr. Arnott has also informed me, that he saw a lady on account of what was supposed to be a melanotic tumour in the mamma. It was blackish in colour, and projected on the surface of the breast ; and, on the head being removed, discharged, with a little pressure, a considerable quantity of genuine sebaceous matter. In fact, there is no other reason why this region should not frequently be the subject of these formations, than perhaps the extra cleanliness which women commonly bestow on it.—Ed.]

[1] 'Observations on Tumours,' p. 206.

It must not be inferred from the preceding limitation, that I deny the existence of hydatid tumours in the mamma. I have met with such tumours in the arm, behind the shoulder, in the lumbar region, in the buttock, and recently, also in the dorsal border of the axilla[1]; in persons who otherwise enjoyed excellent health; and there appears to be no reason why they may not become developed in the mammary region also. The fact, indeed, is not doubtful, in the cases, for example, of Saucerotte,[2] in that communicated by M. Malgaigne,[3] or in that of Bransby Cooper.[4] I only desire to state that they are less common than one would suppose, from the title of the cases that have been published. Moreover, regarded in a therapeutical point of view, these tumours, the diagnosis of which is very difficult, may be confounded, without much inconvenience, with serous cysts, except, however, one desires to treat them by simple puncture or by irritating injections. I hasten to add, that hydatids may attain a considerable size, are often formed by a very thick sac, and imperatively require a large opening to permit of their extraction. In order to establish the clinical diagnosis, it is necessary to have heard the sound, the hydated trembling; but this is a sign which seems hitherto to have been absent in the case of hydatids of the breast. Simple puncture and injection, insufficient when the hydatid has not been extracted, are useless afterwards.

c. *Serous Cysts.*—Hydroceles and hæmatoceles of the breast, tumours formed by pure or bloody serum, accumulated in a closed cavity, are by no means rare. I am persuaded, that some of the cases which A. Cooper and Dr. Warren refer to hydatid tumours, belonged, on the contrary, to serous cysts, the more that such cysts may acquire an enormous size.

M. Marini, some years ago, published the case of a tumour of this kind which had at first suggested the idea of its being a galactocele, and from which was withdrawn about nine pounds of very fluid inodorous serum. The tumour was opened by a simple lancet puncture, and completely disappeared under the action of a common seton, or tent of charpie, kept in the wound for some time, and it showed no traces of the existence of hydatids.[5]

[1] 'Moniteur des Hôpitaux,' 1853.
[2] 'Mélanges de Chirurgie.'
[3] 'Revue Médico-Chirurgical,' t. xiv, p. 55.
[4] Birkett, op. cit. p. 183.
[5] 'Gazette des Hôpitaux,' 1838, p. 282.

The cases of serous cysts of the mammæ that I have met with were far from existing as tumours of such vast dimensions. The largest I have seen scarcely equalled the size of the head of a new-born child, the others hardly exceeded the dimensions of a hen's egg, a nut, or of a large chestnut, and I have even met with them infinitely less in size. In the following case, for instance, the tumour with its fistulous openings, seemed to have been formed by a simple lactiferous dilatation.

Case II.—*Cyst of the right breast; slight discharge from a small fistulous sinus; no operation.*—Adèle Barquin, æt. 15, without occupation, came into the hospital on the 19th of September, 1837. She was of good constitution, had never menstruated, and had never been ill. A year ago, she had a fall, in which she struck the right breast; the next day there was ecchymosis, without pain, which disappeared in a few days. Still there remained a spot the size of a small nut, without change in the colour of the skin. A fortnight ago, having felt some dartings in the breast, she pressed it, and there escaped a reddish fluid; she squeezed again, and there escaped a still larger quantity. Two or three days afterwards she applied for advice, when some of the fluid was pressed out. This fluid escaped in a jet, and suddenly. The fistulous opening, almost imperceptible, was situated in the areola, two lines below the nipple. Poultices, and friction with iodide of lead ointment were ordered; but which the patient suspended after the second application, on the appearance of some small pimples.

On the 20th, at my visit, there were no remains of this eruption. On pressing her breast the preceding night, a larger quantity of fluid than usual had followed. She was left to see whether the cyst would fill again. It began to reappear on the 23d, and we waited to the 27th. The cyst was very small, and difficult to be discovered; an attempt was made to explore the fistula with a very fine probe, a drop of fluid could be made to flow out, but the probe could not be introduced. As it was not certain that this was not one of the milk-tubes much distended, the young woman was advised merely to watch it, without making herself uneasy, and on the 29th, she left the hospital.

Serous cysts, though sometimes single, are also often multiple in the same breast. Some of the tumours of this kind, that I have met

with, were formed by cysts or spaces of very diverse dimensions. In one case, the principal cyst, which held about an ounce and a half of serum, was surrounded with six other secondary cysts, the smallest of which could scarcely have contained a pea, and the others hardly equalled a hazel nut in size; the whole represented a bunch of grapes, or a sponge with thick septa, which might have readily passed for an hydatid tumour with persons who were prejudiced on the subject. Cysts of the breast, moreover, constitute two classes; the one is simple or essential, the other forms a part of some other disease, of some other tumour of the breast.

Essential cysts, such as excavate the mammary tissue, are more often situated between the lobes or in the substance of the secretory structure, than between the integument and the gland, and they are of several species.

In some instances their origin seems to have been in some vacuity or dilatation of a milk-tube; in others, they only differ from ordinary serous cysts in the circumstance that they are developed at the expense of a very compact glandular tissue rather than of the cellular tissue.

It seemed to me, in short, in one case, that the serous collection had been formed between the mamma and the thorax, in that sort of closed cavity, which occasionally exists naturally on the deep surface of the breasts.

Case III.—*Serous cyst of the left mamma; puncture; departure from the hospital without operation.*—Marie Boisvin, æt. 28, came into the hospital, on the 7th of November, 1842, for a tumour, the size of an egg, which was hard and resisting in texture, and had grown during the preceding nine months. She menstruated regularly; and had lately suffered, during three weeks, from severe disease, the nature of which she said her medical attendant was unable to tell; otherwise she enjoyed good health. Iodide of lead ointment, which the patient had employed before coming to the hospital, was recommended to her.

November 12th.—An exploratory puncture was made, and there came out some serum. An operation was proposed to the patient, who declined it, and preferred to leave the hospital.

Case IV.—*Right breast; serous cyst, the size of a pigeon's egg, lumpy, hard, and without fluctuation; puncture; extirpation of the cyst; cure in one month.*—Caroline, a cook, æt. 40, came into the hospital on the 9th of October, 1846. She has given

birth to several children without accident. For a year past, she has noticed the development in the right breast of a small tumour, to which at first she paid no attention; but which, by degrees, had increased in size.

October 10th.—There is a tumour, about as large as a pigeon's egg, situated above, and on the outer side of the nipple. It is lumpy, and hard, has no trace of fluctuation, is not at all painful, and cannot be connected with any external violence that might have given rise to it.

15th.—Believing it to be a solid tumour, an incision was made, as for the purpose of removing a cancerous mass, and in so doing, the knife perforated the cyst, and gave exit to a considerable quantity of serous fluid, after which the tumour collapsed. There remained a cyst, with fibrous walls, which was dissected out, and separated from the cellular substance in which it was imbedded. Ordinary dressing was applied to the wound.

Everything proceeded favorably after this; and on the 1st of November, the patient returned home with the wound almost healed.

Serous cysts of the breast generally arise, without evident cause, as in the case just related. They have been met with in persons of all ages and constitutions, the male even not being wholly exempt. Their exciting cause is frequently unknown, and this depends, no doubt, on the circumstance, that as they are unattended with pain, they are in the first instance perceived only by chance, at a period when their growth is pretty well advanced, and the patients are generally quite unable to point out in what locality they first arose. Their growth is sometimes so rapid, that some of them attain several pounds weight in the space of less than a year; however, the greater number increase so slowly, that they may remain an indefinite period before exceeding the size of a hazel nut, or of a small egg.

Left to themselves, these serous cysts would be compatible with perfect health, were it possible to arrest their progress, and if their existence were not the cause of incessant uneasiness in the patient's mind. As they undergo no malignant degeneration, their prognosis is neither more nor less serious than that of a common hydrocele. They may distress the patient, by their size or weight, and produce mechanical alteration in the neighbouring

parts or organs; but, in their own nature, they are destitute of any real danger.

Consequently, they may be left to themselves, if the patient has no pain, and is sensible enough not to feel uneasy, or, if she has great dread of such measures as would effectually get rid of them. The remedies which may be had recourse too, in cases of serous cysts of the breast, are divided into two classes—simple topical applications, and surgical operation. Constitutional treatment is seldom of any real use. Topical applications afford but little chance of success, except, perhaps, at the very outset of the disease; and they can only be recommended in the case of women who have an extreme dread of anything in the shape of a surgical operation. Amongst local applications may be mentioned, iodine ointments in general, and the iodides of lead, potash, or mercury in particular. After employing them for some time, we may advantageously substitute soap or hemlock plaster, or the Emplast. de Vigo, either in succession or alternately.

A solution of hydrochlorate of ammonia in simple water, or in vinegar and water, in which strips of linen are to be dipped, may likewise be serviceable. Linseed-meal poultices sprinkled with sal ammoniac are valuable, and would be preferable if they were less inconvenient to apply. If we desire to exhaust all the chances of resolvative treatment, we must also have recourse to blisters. A blister to cover the whole tumour, renewed every fortnight, forms undoubtedly one of the most powerful remedies to which we can resort. Between the applications of each blister, we must also make use of the ointments, lotions, or plasters, to be mentioned presently. Compression, which is in itself useful, is also a good accessory to the preceding measures, whether it be employed alone or concurrently, with the blisters and plasters. Nevertheless, as it is of importance not to misapprehend the value of such measures, we should inform the friends of our patients, that surgical operation alone deserves their confidence or can effect a permanent cure.

Those purely serous cysts of the breast which have some analogy with hydroceles, may be submitted to the same kind of operation as the former disease. There can be not doubt, in fact, that a simple incision with the employment of a tent or seton, or of canulæ and caustics, or irritating injections, will answer equally as well as extirpation of the whole tumour.

However, there are some distinctions to be made, serous

cysts of the breast are subject to variations which must exercise some influence on the mind of the surgeon as to the operation to be preferred. Thus, there are some which are formed of merely one sac, with its parietes almost as soft as the normal tissues, presenting neither thickening, nor induration, nor degeneration of any kind. In the treatment of these, we may without hesitation employ the same operation as for hydrocele. Others, also unilocular, have such thick and dense walls that fluctuation is always doubtful, and the volume of the tumour depends more on the tissue of the cyst than on the fluid in its cavity. The diagnosis is consequently rendered so difficult, that, before the operation, the surgeon is often in doubt whether the tumour arise from a cyst or from a solid growth. The most rational course, in such a case, is to proceed as if we were sure that the patient had a solid tumour. At other times, the tumour is made up of a collection of little sacs or cells, which are sometimes very close set and grouped together in the form of grapes, and sometimes scattered without definite boundaries, so that, simple incisions, setons, separate excision, and injections, are inapplicable. It is thus of primary importance to distinguish accurately the kind of cyst we are called upon to treat. Supposing it be purely serous and unilocular, and that the cavity is either uniform or rough, we have every chance of succeeding by means of an incision along the whole extent of its cutaneous surface, and subsequently dressing the wound from the bottom with lint, so as to excite inflammation, suppuration, granulation, and cicatrization, just as in the case of an abscess. This operation, however, cannot fail to be painful; and the diseased part in which we purposely cause inflammation and suppuration, does not in some patients, finally cicatrize until after the lapse of a considerable length of time, six weeks or two months, for example.

In short, the necessity of the daily dressing, and the continuance, of a large wound for several weeks are circumstances that make incision an operation to be proposed only in default of a better.

By passing one or more setons through several diameters of the tumour, we attain the same end, at least, in some cases; but all the objections to the treatment of hydrocele by seton apply equally here. In the mamma, as in the scrotum, we run the risk of converting the cyst into an abscess, the opening of which by extensive incisions soon becomes indispensable, or of not

causing a sufficient amount of inflammation to be certain to effect a radical cure.

A more simple operation than the preceding, consists in opening the cyst in one point only, and then employing a tent or stimulating injection, to produce adhesive or purulent inflammation. Yet nothing is more uncertain than such a measure. If, indeed, we resort to incision at all, it should be to one that will expose the whole interior of the sac.

Caustics applied to the thinnest or most dependent part, so as just to penetrate the cavity of the cyst, eventually lead to the same result as incision; but as their action is less certain, and especially much less rapid, and as in these cases there is no change to be produced in the tissues, causties do not in themselves deserve the preference. Their employment is only indicated when some of the lobules of the tumour are too much thinned, or in cases where it is impossible to reconcile the patient to the idea of a cutting instrument.

Moreover, there is an operation for these cysts, which is so simple, easy, and innocent, that the surgeon would do wrong to propose or attempt any other before trying it. I refer to stimulating injections. Empty the tumour by means of a small trocar, and immediately inject into the sac a solution of iodine (one third of tincture of iodine to two thirds of water), and the operation is complete. An injection of wine or brandy, or any other stimulating fluid might, perhaps, do equally as well, but I mention a solution of iodine, because it is the only one that I have personally employed in the treatment of serous cysts of the breast. In proposing it, seventeen or eighteen years ago, I had hardly anything to go upon excepting analogy; but at the present time, having had the opportunity of employing it on several occasions, I have attained results which leave no doubt about its efficacy. Besides in the instance of the young man whose case I referred to in the year 1838, I have up to the present time employed it on ten occasions in the female.

Case v.—Madame B—, the mother of a medical man resident in the suburbs of Paris, had a serous cyst about the size of a hen's egg in the left breast, which had tormented her for several years, and which she had treated with all imaginable external and internal remedies. The tumour, although only the seat of occasional pain, was, however, the subject of continual uneasiness to

the patient, who had taken many opinions about it, and had been recommended by several experienced surgeons to submit to its extirpation. The patient, who was a person of extremely nervous temperament, and considered herself to be the subject of cancer, accepted without much repugnance my proposition to treat the disease by means of a simple puncture, followed by injection, although she could not make up her mind to its extirpation. About two spoonfuls of pale yellow serum escaped through the trocar, after which a solution of iodine was immediately injected. I allowed about half the quantity to escape again, and the operation was concluded. Little pain ensued for two days, but the breast swelled up moderately, without febrile reaction. No topical applications were made use of. At the termination of the fourth day, resolution commenced; and the tumour gradually diminished, so as no longer to be recognisable at the end of a fortnight.

Since then, that is to say, since 1840, there has been no further trouble with it, and Madame B— has remained radically cured.

In the course of the same year, I performed a similar operation on Madame C—, the wife of a medical man, in Burgundy, who was circumstanced in a manner precisely similar to the preceding patient. Having come to Paris, in order to have the tumour, which had long existed in her left breast, removed, she was brought to me by Dr. Faivre, her countryman.

Convinced, after examination, that the tumour was a cyst and not a cancer, I proposed the iodine injection, which was joyfully accepted. The operation was performed on the third day afterwards, and the patient, who was extremely timid, was astonished at the small amount of suffering. There was no febrile reaction, but moderate inflammation of the breast; and at the end of three weeks the tumour had entirely disappeared.

In 1843, Madame C—, who had perceived some secondary swellings at some distance from the tumour, for about two years, returned to Paris, with a new cyst in each breast, both of which were operated on at the same time, and disappeared with the same simplicity, and without more trouble than on the first occasion.

Case VI.—*Tumour in the breast, with a cyst; puncture; injection of iodine.*—A sempstress, named Eckert, æt. 66, came

into the hospital, on the 21st of April, 1847, for a tumour in the right breast, which had existed for five years. On the occasion of the cessation of menstruation, the whole body of the patient had become covered with boils, which soon disappeared, but were succeeded by a formation in the right breast. Two swellings appeared, one on each side; but that in the left breast was got rid of by means of plasters. The tumour, which was about as large as a pigeon's egg, when it was first discovered, seemed to form a part of the mammary gland: it projected somewhat above the nipple, was covered with healthy skin, and in size was rather greater than half the fist. It was soft and lumpy. The most elevated point suggested the idea of fungus hæmatodes. Below the nipple, there was another projection, a sort of cyst. However, the age of the patient rendered the existence of cancer much more probable than that of a cyst; and the immobility and hardness of some of its bosses, as well as its size, pointed to its being encephaloid if it were not a cyst, with fungoid parietes.

April 24th.—A puncture was made with a trocar, and there escaped a large quantity of blackish serous fluid, mixed with crystals of cholesterine. The rest of the mamma remained hard. An injection of the tincture of iodine, which was immediately thrown in, gave rise to but little reaction. On the fifth day, resolution commenced, and proceeded without interruption, so that the patient was able to leave the hospital on the 10th of May.

The operation in the breast is extremely simple, more so than in the case of hydrocele, for in the breast nothing of importance can be injured by the trocar, and the density and interlacement of the tissues prevents the displacement of the canula, and the infiltration of the fluid; the patients need not make any alteration in their regimen, nor is it absolutely necessary to suspend their usual occupation.

The only difficulty in the operation, exists in the small size of the cysts, or in the too great thickness of their walls. I have therefore no hesitation in saying, that injection should be preferred to all other methods, for it has the efficacy of the others without their inconveniences, and no other can be compared to it, either in security, facility, or innocence. It does not follow, however, that all patients will make up their minds to submit to it the first time it is recommended to them.

Some patients have so much difficulty in believing that any surgical operation can be neither serious nor painful, that they do not willingly allow of the existence of any differences amongst them; others, who have once made up their minds to it, imagine that they have a better chance of being permanently cured, without the possibility, as they express it, of the disease returning, and go so far as of themselves to prefer to be treated with caustics, or to submit to extirpation, or at any rate to free incision into the cyst, if it should be recommended to them, contrary to the advice of the surgeon who may have promised to cure them by simple injection. The following two cases illustrate these observations:

Case VII.—*Serous cyst in the left breast; simple puncture; no injection; return of the collection.*[1]

Case VIII.—*Serous cyst in the left breast, which had been for some years the seat of an adenoid tumour; puncture and injection proposed; treatment by caustics preferred.* — Madame M—, a lady residing in the country, who had consulted me some years before, for an adenoid tumour, which I had removed from the breast, applied to me again in 1843, for a new swelling, which had made its appearance in the same mamma. The adenoid tumour previously existing had never exceeded the dimensions of a hazel nut, and was seated at the external and somewhat inferior part of the left breast. The patient had rapidly recovered from the operation, and had remained in good health until the present moment. For the past two years, a new swelling had been perceived on the inner side, and somewhat below the areola. When I saw it, the tumour was as large as a small hen's egg, like a little globe, and projected by more than half of its entire extent on the surface of the breast. There was no thickening nor induration of the tissues in the neighbourhood; and the walls of the cyst itself were very thin, and fluctuation evident.

The patient who was delicate and excitable, was also very uneasy about herself, and dreaded any fresh operation, being impressed with misgivings as to dangers with which she believed herself surrounded. She was firmly persuaded that the first tumour had been a cancer, and that the second was another; and reasoning on these data, she concluded that after the second tumour, a

[1 The details have been omitted.—Ed.]

third would make its appearance, and that she would thus be condemned to inevitable death preceded by incessant suffering.

For my own part, I was perfectly certain, that the tumour was merely a cyst, and expected that the lady would gladly have accepted my diagnosis, and have been delighted to understand that she could be cured almost without pain, and without incision, merely by the aid of a simple prick, followed by injection.

It was of no use, however; she adduced argument upon argument to prove to me that her disease was cancer, and that a new operation would be improper, as favouring the development of another similar tumour, and that consequently an attempt ought to be made to cure her without operation. I shortly afterwards heard that she had consulted some person, who had applied caustics to her tumour.

It is right to say, however, that such cases are altogether exceptional, and that most patients joyfully accept the proposal of simple injection into the cyst, rather than submit to a cutting operation. Extirpation of the tumour may still in some instances prove the last remedy to be tried, and the only operation capable of certainly curing the patient. There are cases, in fact, in which the fluid forms but a small part of the cyst, the tumour being made up of changed and altered tissues rather than of a cyst serving as a reservoir for a collection.

Case ix.—A lady, æt. 45, who had never borne children, came to consult me in 1838, for a tumour of the mamma, which had affected her slightly for two or three years, and now began to plague her seriously. This tumour, which was situated at the external and inferior portion of the left breast, was as large as a flattened egg. It was slightly irregular, pretty well circumscribed, elastic, and moveable. The cause of its appearance was unknown; it was not the seat of any pain, but occasioned a dragging sensation, and its development had been tolerably rapid for some months past. I commenced the operation with the impression that it was an adenoid tumour. The dissection had been about three fourths completed, and no other idea had entered my head, when just as I desired to raise up the tumour, and clear it away on the lower surface, the point of the knife entered it, and gave exit to about half a spoonful of a light yellowish fluid. After the operation, I examined the mass, and found

in its centre, or rather on its pectoral surface, a small cavity with smooth walls, slightly irregular, which might have contained a hazel nut.

The rest of the tumour, and the walls of the cyst, were composed of a lardaceous, fibrous, dense, elastic tissue, resembling the structure of a mamma, the different strata of which had long been thickened or compressed together. The thickness of the walls being, in different situations, from four fifths to an inch and one fifth in extent, it must readily be admitted, that the little collection which occupied its centre would certainly have escaped any external examination, and moreover, that even with an exact diagnosis, it would not have sufficed to have attacked this cyst in order to cure the tumour, and that extirpation would still have remained preferable to every other measure. The patient, who recovered very well, has not hitherto experienced any return of the disease.

In the course of the year 1851, I met with a case, in almost all points, similar to the preceding.

Case x.—*Cyst with fibrous walls in the right breast; operation; slight erysipelas; cure in three weeks.*[1]

To recapitulate; if the cyst exceed the size of a hazel nut, and its walls be not more than some lines or two fifths of an inch in thickness, the injection of iodine affords the first and best remedy; if it be small, or have thicker walls, provided that fluctuation can still be made out, an incision extending through the whole anterior wall will answer better; the interior will suppurate, and must then be treated as an open abscess. But, if the tumour be in great part made up of solid, thick, lardaceous tissues, and contain only a small quantity of fluid, extirpation should unhesitatingly be recommended.

I should also remark, and the observation now made applies to other varieties of cysts, as well as to serous ones, that those tumours of the breast which are commonly called cysts, but imperfectly answer to the name. In all cases that I have dissected, it was plain to me, that they were not sacs which could be isolated, and detached from the surrounding tissues, but rather simple cavities, and vacuities, hollowed out in the healthy or morbid

[1 The details have been omitted.—Ed.]

tissues; they were indeed closed like cysts, or serous membranes, but on the exterior there was no line of demarcation between them and the natural tissues. They are, in short, cavities analogous to the cells of a sponge, or a honeycomb, or to the vacuities found in the parenchyma of an organ; and not bags, or separate sacs, having an independent existence. Neither, when we proceed to remove them, must we expect to be able to enucleate them; we must cut through sound tissue, and remove at the same time, a greater or less extent of the organ in which they are situated.

D. *Sero-sanguineous Cysts.*—In place of containing serum, that is, a diaphanous or yellowish, slightly greasy fluid, mammary cysts often enclose a material of about the same fluidity as serum, but of an entirely different colour; that is to say, a brownish, or reddish brown fluid, somewhat resembling decoction of coffee, or sometimes the colour of the menstrual secretion.

This kind of cyst is at least as common as that described in the preceding chapter, and its pathology is also the same. The cavities are alveolar, or in the form of vacuities, rather than surrounded with distinct walls. Sometimes the tumour, like the serous cysts, has only one cavity, which may be as large as an egg. On the other hand, there are often several cavities in one tumour, and in such cases it is uncommon for each collection to attain considerable dimensions. They are generally vacuities, little swellings, with a streaked aspect, of the size of a lentil or pea, or of a filbert or chestnut, disseminated through the different parts of the mass. When opened, these alveoli suggest the notion of cells, established in the glandular tissue itself; cells having sometimes the appearance of being continuous, either with a milk-tube or with some of the veins, and which often constitute genuine cavities or closed sacs.

Case 1.—A young lady, æt. 36, enjoying excellent health, had, in the substance of the left breast, thirteen very small cysts, the fluctuation in which could not be made out in the first instance. Before extirpation, these tumours gave to the breast a bossed aspect, and, to a certain extent, the fungous appearance of encephaloid cancer. The absence of all pain, the slowness with which the disease had developed itself, namely ten years; the natural appearance of the integuments, and of the subcutaneous structures, and the general condition of the health and organic functions,

seemed to me, however, to obviate the possibility of mistake. Of the cysts, which were situated either in the parenchyma of the glandular tissue, or in the interlobular fibro-cellular tissue, and the parietes of which were slightly hardened, or, as it were, lardaceous, two were as large as a small hen's egg, others equalled the size of a walnut, and some were not larger than a hazel nut; and there were even some of still smaller dimensions; all were separated from each other by a certain thickness of healthy or lardaceous tissue. Moreover, it was easy to distinguish amongst them the secretory tissue, and the other natural elements of the breast, and to convince one's self that there was neither degeneration nor transformation of structure, but simply abnormal collections, existing between the layers or primary elements of the mammary gland.

Since the year 1830, the time when this case occurred, Madame F., who was the subject of it, and resides at Laon, has never perceived anything fresh in the breast. I have seen but six or eight similar cases, the tumours in all the latter patients being less voluminous and less numerous than in the preceding instance.

In all, the physical characters, and the anatomical composition of the tumours, were similar; the differences between them were, at least, but of slight moment. In all, the fluid was almost as liquid as serum, and had the same brownish tint; there were some more red, or more black, or of a less deep tint than others, and this existed indiscriminately in the larger and in the smaller ones. I have never met with clots or concretions in these cavities, the lining membrane has always been smooth, and as if washed and destitute of any fibrinous deposit.

In one of the patients there were but three cells, two of which, separated by a sort of thick septum, were each as large as a small walnut; the third, distant about four fifths of an inch from the others, did not exceed the dimensions of a hazel nut. In another case, the whole tumour resembled a small sponge, or a mass of alveolar structure. The inequalities with which it was sown, suggested the notion of grains of seed, of a blackish or yellow colour, the size of which varied from that of a pin's head to that of a hazel nut; all being filled with a brown fluid. Lastly, in a third patient, the only tumour that could be perceived before the operation, was the size of a small egg, and occupied the centre of a layer, which itself contained an infinity of little secondary ones.

The cells, or morbid cavities, were throughout seated in one or more lobes of the gland, and of its fibro-cellular tissue. These tissues were simply thickened, condensed, and somewhat lardaceous, but without any degeneration, or appreciable transformation. Nowhere was there the appearance of distinct cysts, or new products, and, moreover, in no part was I able to discover any communication between the milk-tubes or the veins, although two blackish spots, which were observable at the base of some of the cells, at first gave the impression of some communication of the kind. From the preceding details, it follows that, in some cases at least, sero-sanguineous cysts can be recognised at the bedside of the patients. Often multiple, they occur in the form of an irregular tumour. These irregularities, of very unequal dimensions, fluctuate when they exceed the size of a chestnut, but usually appear hard and concrete when they are smaller. Almost always situated in the substance of the organ, they are covered with natural, thin, and supple skin. The tissues, at the base, are mixed up with the rest of the gland in so intimate a manner that the question occurs, what is the exact seat of the disease. Far from a rosy or pale reddish tint, as we see in the case of some serous cysts, the integuments covering sero-sanguineous cysts have, especially when the pressure of fingers that may have been handling them has been removed, a livid or blueish aspect. Less tense, less completely filled perhaps, surrounded with tissues which are less thick and dense than serous tumours, sero-sanguineous cysts are nearly always destitute of colour; and, from their globular form, elasticity, and fungous, or semi-fluctuating character, readily suggest the idea of an encephaloid mass; but the absence of all disturbance of the general health, the extreme slowness of their development, and other characters of innocence, with which they are accompanied, forbid any suspicion of this nature.

The sero-sanguineous cysts of the mamma, have seemed to me referable to two varieties of causes; to external violence, or to some disturbance in the uterine functions. All the patients I have met with attributed them to some blow, to some accidental squeeze, or to some rude pressure. In one case it was a blow from the elbow; another patient had hurt herself against the corner of a piece of furniture; a parcel had fallen on the chest of a third, when she was removing it from its shelf. Unmarried persons are almost the only ones in whom I have hitherto seen the complaint.

Case II.—*Cysts containing decomposed fibrine; extirpation; erysipelas; cure.*—Camus, æt. 27, an unmarried servant, of nervous temperament and delicate constitution, with irregular menstruation, came into the hospital on the 24th of November, 1836. Three years before, whilst in the service of a lady who was subject to mental attacks, she received a violent blow from the fist, on the left breast. From this, there resulted an ecchymosis, which disappeared, as well as the accompanying pain, at the expiration of some weeks. The patient had forgotten the contusion, when, about six months afterwards, she perceived the formation, at the upper part of the breast, of a swelling, which at that time, was not larger than a hazel nut. Although at first it grew but slowly, at the expiration of five months it had acquired a considerable size.

At the present time, the tumour, which is situated above the nipple, in the upper part of the gland, is the size of a large hen's egg, and is endowed with much mobility; its deeper surface is not adherent to the thoracic parietes, and the skin, which is moveable below it, has hardly undergone any change in colour.

The mass lies at the upper part, hidden, as it were, in the midst of the cellular tissue, and below, seems to be mixed up with the tissue of the gland. On careful examination, it is found to present an unequal consistence; in some points, in fact, being tolerably hard, and in others, soft and fluctuating. It is lumpy, but the inequalities on its surface are not very apparent. It looks like encephaloid, but its irregularities are not very well pronounced, and fluctuation is too manifest in some points for us to think of any degeneration of the kind. It more probably consists of one or more cysts. According to the opinions of some, it was an hydatid tumour; and according to others, having resulted from a contusion, it would probably be found to contain blood. The patient was in good condition; her general health excellent; the disease appeared to be entirely local, the mammæ alone being involved, and the axillary glands being unaffected.

29th.—An operation was performed with the intention of preserving the nipple; the skin being thin, an ellipsoid piece, an inch in transverse diameter, and two inches in the other direction, was removed. Several arteries bled freely, and four of them having been tied, the wound was closed. On examination after removal, the tumour was found to be formed of cysts containing a softened, gelatinous material, which was blackish in some parts, and bore

some resemblance to encephaloid, but which was evidently decomposed fibrine. The cysts, which were of variable size, could readily be emptied; their walls were healthy, easily cleansed of their contents, and no doubt formed out of portions of the mammary tissue. Erysipelas, and constitutional disturbance followed the operation; but the patient was able to leave the hospital on the 29th of January, 1837, and has remained well ever since.

In the majority of my own cases, the patients had either suffered on several occasions from suppressed menstruation, or had remained virgins to a somewhat advanced period of life; in no one of them had menstruation been uniformly regular. I must add, however, that the relation between this disease and disordered menstruation cannot always be satisfactorily made out; for there are cases recorded in which bloody cysts existed in the mammæ of women who had borne children, whose menstruation had never been disturbed, and in whom there was no evidence of any external violence to the breast.

From the fact, which is mentioned elsewhere, that at the menstrual period ecchymosis occasionally occurs in the mamma, especially in women who are unmarried; and that the same thing may take place in consequence of disturbance in the uterine functions, I have been led to inquire whether some sero-sanguineous cysts may not be attributed to spontaneous effusion of blood amongst the anatomical structures of the breast.

In this way we may explain, how the number of such cysts is essentially variable; how their development takes place gradually, and may even cease altogether for months or years, and then recommence again more or less vigorously; how the general health continues good; how the contents of the tumour are sometimes more, sometimes less, fluid, sometimes reddish or yellowish, and sometimes of a deep black colour; and, in short, how the natural tissues of the breast seem only to have suffered mechanically, and to have remained for years without degeneration, and without undergoing any marked change in the neighbourhood of these cysts.

However these things be, the prognosis of sero-sanguineous cysts of the mamma is not necessarily serious; I have seen them remain for several years unchanged, without increase, and then spontaneously disappear. Marriage occasionally brings about this result, in women who are still young; and later in life, the cessation of menstruation may have the same effect.

It is not the less true, however, that more usually the tumour persists indefinitely, and may attain considerable dimensions, when left without treatment. Like the serous or watery cysts, the sanguineous ones do not, as has been shown before, depend on any general constitutional affection; at most, it is in cases where the uterine functions are irregular that we are justified in attributing them to some peculiar condition of the blood. They thus constitute a local disease. Having nothing of malignancy about them, there is every security that they will not return when once the patient has been relieved of them.

However, the following case shows how sanguineous cysts of the mamma may sometimes be complicated, and assume formidable dimensions.

Case III.—*Cyst in the right mamma (sanguineo-hypertrophic), of a year's date, the size of the two fists; extirpation; intense erysipelas; death; post-mortem examination.*—Richaud, a servant, æt. 24, of good constitution, and highly sanguineous temperament; regular; a year ago received a blow from the latch of a door. At first, she paid no attention to it; but during the past three months the injured part has much increased in size. In the month of July, she perceived a swelling in the breast, the size of a hen's egg, which has since rapidly acquired the dimensions of the two fists. In October last, she consulted Dr. Leroy des Barras, at Saint Denis, who made an exploratory puncture into the swelling, and gave exit to about eight ounces of a brownish red fluid, somewhat resembling coffee. The tumour diminished in size by three fourths; but a few days afterwards had again attained its original volume, when the patient applied for advice at La Charité.

November 6th, 1847.—The right mamma is the seat of a tumour, the size of both fists, situated at the inner and upper part of the breast. It is hard and resisting in its whole circumference, and does not seem to be independent of the mammary tissue; it is fluctuating, however, to the extent of a five-franc piece, on the inner side of the nipple. The boundaries of the cyst are formed by hardened, irregular, lobulated, mammary tissue, especially on the inner side; the skin covering it is non-adherent, and is traversed by large veins. The patient states, that the slight pain which she experiences becomes increased at the time of menstruation. Below, and on the inner side, the breast, which retains its normal characters, embraces the external half of the tumour, as

in a crescent. There is nothing morbid in the corresponding axilla.

The patient's father died of old age, at 82 years; and her mother at 52, from ascites. She had suffered from an abscess following her confinement, but it had got quite well.

December 3d.—The tumour was extirpated; and the lips of the wound brought together by four needles, and a loosely tied suture. A strip of lint was inserted in the lowest angle of the incision. Simple dressing was applied. At five o'clock of the same evening there was fever, with a red face, and sweating.

4th.—Some pain in the breast.

5th.—The breast had lost its redness, and there was no suppuration. The general condition as before.

Pathological anatomy of the tumour.—The tumour was spheroidal, hard, tense, elastic, smooth, and covered here and there with little lumps of fat; its weight was two pounds, and it was irregularly lumpy, of elastic consistence in some parts, and fluid in others. An incision into it gave exit to about a wine-glass of reddish fluid, the colour of rather clear coffee. This fluid, which was inodorous, and had its surface covered with small shining particles, was similar to that drawn off by Dr. Leroy, and deposited a brownish powder, in trifling quantity, at the bottom of the vessel. When opened and emptied, the sac could be easily turned inside out, so as to allow its internal surface to be examined, except in about one inch and a half or two inches of its extent. In this situation, the walls were continuous with a solid mass enclosed in the sac; which, by numerous prolongations formed septa of greater or less size in some parts, and straight, and fasciculär in others. It was made up of thin, white, pearly, smooth, fibre-like tissue, the septa of which were continuous with the walls of the cyst, without appreciable line of demarcation. The interior of the cyst was whitish in colour, perfectly smooth, and covered with small brown, projecting specks, which were rough to the touch, and appeared to be ulcerated, so as to imitate the follicles of the small intestine. Between these specs was a very fine vascular network, injected with red blood, which was set off by the white colour of the fibrous tissue. The rest of the cavity was as polished and shining as a serous membrane, and its walls were of considerable thickness. It was like a very thick pericardium, and formed of fibrous tissue.

The solid mass in the interior, which alone constituted four

fifths of the tumour, resembled a cauliflower; the masses of which it was composed being separated from one another by grooves of variable depth. These masses were themselves formed of lobules; the lobules of granulations, and the granulations of very small grains. United together, these formed lobes; others, also tolerably numerous, were floating, isolated, and supported by a fibrous pedicle, which was narrow at the base, and expanded like a hood at their free surfaces. The colour of these lobes was not the same everywhere, but varied in different parts of the mass. Some were whitish; others of a yellow amber colour, and larger in size; others again were of a dark grey; and finally, there were a great many which were fixed and imbricated together, and of the colour of soaked meat. The little isolated fragments forming these granulations resembled the granulations on the valves of the heart.

The density of the whole mass, taken together, was considerable: its texture was variable, the least dark coloured parts being toughest, and *vice versâ*. Under traction, the tumour became divided rather than torn into lobules. Several lobules united together, so as to form a mass the size of a walnut, made up a tissue resembling that of the mamma itself, only the colour, instead of being a dull white, as in the natural condition, was opaline. No lymphatic vessel, and no nerves were discovered.

Microscopical examination by M. Lebert.—There was marked hypertrophy of those primary lobules which ordinarily cannot be distinguished by the unassisted eye; however, on careful dissection, and on cutting very fine vertical sections of the tumour, a considerable number were displayed, which presented exactly the same characters as in ordinary partial hypertrophy of the mamma; that is to say, elongated cells, some of which were rounded, others pointed at the extremities, having distinct outlines, containing a nucleus one tenth of a millimetre in size, by one eighth or one sixth in length. Their interior was lined by a beautiful fine epithelial structure. Isolated nuclei, the $\frac{3}{400}$ths of a millimetre long, by $\frac{1}{500}$th of a millimetre in breadth, having two punctiform nucleoli in the interior, were also met with, as well as complete cells of $\frac{1}{100}$th to $\frac{1}{80}$th of a millimetre in size, with pale outline, round, oval, or irregular in shape.

To the naked eye, the tumour did not resemble cancer, and did not suggest to me the idea of its being of that nature.

Under the microscope, also, the cells composing it differed from those of cancer:

1. In size; being much smaller.
2. By their much greater flatness.
3. By their very small punctiform nucleoli.
4. By their pavement-like arrangement.
5. By the absence of fat-elements and granules in their interior.
6. By their regular disposition over the internal wall of the primitive glandular lobules.

After the operation the patient was attacked by erysipelas, from which she gradually sank, and died on the 26th of December.

28th.—*Autopsy.*—Nothing remarkable was discovered; it was merely observed, that the small intestine was studded with reddish, arborescent spots.

The treatment of sero-sanguineous cysts of the breast must be regarded in three points of view: 1st, generally; 2d, as regards topical applications; 3d, as regards surgical operation.

General and Local Treatment.—If the tumour be small and recent, it may disappear on the patient being placed under other hygienic and social conditions. Preparations of iron and a fibrinous diet are indicated, whenever there is the least appearance of chlorosis or anæmia. Country air, exercise, and amusements succeed best, in those persons who lead sedentary lives, or are of melancholy dispositions. Marriage is advisable in others, whose general health is good, and whose menstruation is not sufficiently abundant. Leeches, either to the vulva or beneath the breast, should not be omitted, in cases of amenorrhœa or plethora, when there is no danger of chlorosis. Compresses steeped in a solution of hydrochlorate of ammonia, or in wine, or vinegar; and linseed poultices and vinous poultices, sprinkled with sal ammoniac, are also indicated. In other cases, it is well to try iodine ointments or even compression. But the most energetic and efficacious topical application is blistering, which treatment can conveniently be associated with the other measures.

When these fail, or when the tumour is of long standing, nothing remains but surgical operation. If the tumour be small in size, or stationary, or the patient be advanced in life, and of

quiet temperament, we may abstain from interference. Incapable, according to all appearance, of malignant transformation, and possibly remaining for the whole life without acquiring a large size, scarcely ever causing much suffering, and giving rise to uneasiness merely from its mechanical effects, or from the idea of deformity associated with it, these tumours may, without inconvenience, be left alone in a great number of patients.

Where the tumour occasions anxiety, either in consequence of its growth, or from its presenting some indication of a tendency to degenerate, or when the patient finds it the source of incessant anxiety, and desires to get rid of it, we may recommend either incision, seton, injection, or extirpation.

In this instance, as in the case of serous cysts, injection should be preferred when the tumour is single, of large size, and the diagnosis perfectly clear; but as these conditions are present only in a very small number of cases, both seton and incision are also occasionally indicated. For instance, when we feel sure that there are not more than two or three cysts, and that they are at least the size of hazel nuts, the seton, or better still, incision will answer perfectly well. Unfortunately, however, the diagnosis of these tumours is rarely sufficiently precise to determine positively that by the side of the most prominent cysts, there are not a number of infinitely smaller ones. Experience shows, that this is by far the most frequent condition, and as the seton, and incision or injection are all open to the chances of bringing about an incomplete cure, and are almost inevitably followed by the return of the disease, it becomes both safer and more prompt to proceed at once to extirpation. In healthy tissues, and in persons whose general health is unaffected, the operation which, in other respects, is easy and simple, leaves merely a regular wound in the neighbourhood of the breast, the cure of which is almost always rapid, and without complication.

E. *Muco-serous Cysts.*—I have met with cysts in the breast which were distinguished from the preceding, by the nature of their contents even more than by the appearance of their walls. Instead of a reddish or almost serous fluid, there was in them a grey or yellow matter, somewhat analogous to mucilage, with a consistence varying between rather thickish cream and semi-solid mucilage. Up to the year 1838, I had met with three such examples, but since then I have only seen two others, the characters

of which were so well marked, that I was able carefully to investigate both their origin and their nature.

In one of the patients, the tumour, the size of a nut, was situated on the inner side, and below the nipple; in another, it was just below it, whilst in a third, it occupied the upper part of the mamma. In the last case, the tumour was of three years' duration, and seemed to have originated in a blow from the elbow, followed by extensive ecchymosis, which remained visible for a long time below the nipple. The tumour was not perceived until some months afterwards. It was indolent, caused no disturbance to the general health, or to any function, and in the space of a year had attained the size of a small hen's egg.

The patient, a girl, æt. 22, had from time to time felt some shooting pains in the mamma, and came of her own accord to the hospital to be operated upon. It was evident that the tumour, which was situated in the subcutaneous structures, had originated in one of the most prominent lobules of the gland. As it was without inflammatory complication, surrounded with perfectly healthy tissues, elastic, and up to a certain point resembled an adenoid or fungous tumour, I was for the moment in some doubt as to its real nature. The operation alone demonstrated to me that it was a cyst filled with a greasy, clotted, grayish and oleaginous fluid, speckled with little whitish granules. Nothing similar has yet been described in the breast, and I feel that a more detailed description than the preceding is necessary to make the peculiarities of this material perfectly clear. In saying that it was neither like serum, nor blood, nor pus, nor sebaceous matter, and that it suggested the idea of somewhat greasy mucilage, and in some respects resembled very fluid mustard, I admit that I only succeed in giving a very incomplete notion of what it really was. It is to be regretted there was neither a microscopical nor a chemical examination made of it; but at that period, those resources were still but little employed, and the requirements of the operation, moreover, would have rendered their employment very difficult.

The cyst was remarkable also in another respect; its walls were ossified, like the arteries of old men. They had been mistaken for an osteo-calcareous layer, mixed up, in its external surface, with the healthy tissues of the neighbourhood; thin, flexible, cracking under the finger like a sheet of parchment; it somewhat resembled those maxillary tumours which Ronge and Dupuytren subsequently described with so much care. The rest

of the mammary region preserved its natural condition, and the young woman in other respects enjoyed perfect health.

Cysts with osseous walls must never be confounded with osseous tumours, or with those osteoid productions spoken of in another chapter. These, in fact, are cases of a simple brittle shell, thin, and laminated, or of a closed cavity, with calcareous walls, filled with a peculiar liquid; whilst, the tumours and osseous productions of which I spoke elsewhere, form solid masses, which have no means of enclosing collections of fluid.

In other patients in whom I have observed the oleaginous cysts, the fluid had the same characters as in the preceding case; it had the same colour, consistence, aspect, and was in every respect similar, except that the enveloping structure was soft, vascular, and without any trace of ossification. The tumour in all these cases was globular, unilocular, and surrounded with healthy tissues. One of them was scarcely larger than a large hazel nut, and there was no pain, and no morbid change in the surrounding parts.

The etiology of these tumours has hitherto been extremely obscure, and has not formed the subject of any special investigation. We may suppose, that many of them are merely the lactiferous ampullæ; but it is difficult to refer them all to this source. As most women attribute them to a blow, or to some external violence, I have asked myself, if the disease, at any rate in some instances, may not have arisen from some effusion of blood or lymph. Such an hypothesis will readily account for almost all the varieties of cysts in the breast. If, in consequence of a blow, or of irritation, or pressure, or some internal change, a certain quantity of blood be effused amongst the tissues; or arrested, and cease to circulate in the capillary system, may it not then become the subject of all the changes, and morbid processes, which effused blood undergoes itself, or determines in other situations? Thus, as I have already observed, if the blood be simply infiltrated, there is nothing to prevent its reabsorption, and the return of the tissues to their normal condition. It may, possibly, indeed, happen, that some of the blood particles may escape this re-absorption, remain as foreign bodies, and thus give rise to the formation of a tumour, which eventually becomes a cyst. If the blood, in place of being infiltrated, be accumulated in a mass, it is still more likely to excite a superabundant exhalation of fluid, and thus to produce a tumour, the size and com-

position of which will vary in different cases. It is easy to understand how a number of these niduses, occurring simultaneously or successively, may give rise to those multiple cysts, which have been described above, under the title of "*Sero-sanguineous cysts.*"

In consequence of the transformation of which it is susceptible, the effused matter may give rise:

1st. To a solid tumour, when the hardened masses of lymph or blood preponderate, or alone remain in the depot.

2d. To a collection which may become, or may remain, fluid, if it be principally the serous part of the blood that has been effused, or if the parietes of the cyst have become the seat of a marked degree of exhalation, whilst the fibrine has in some way or other disappeared.

3d. To a semi-fluid tumour, of the consistence of bouillon, when the coagulated blood has become dissolved, and intimately incorporated either with its own serum or with fluid effused from the surrounding tissues.

I have never met with those moveable little bodies in mammary cysts, which are so often present in the synovial bursæ. When the thickened materials disappear, and the hæmatine does not become disengaged from the serum, the cyst remains blackish in colour, and constitutes a sero-sanguineous cyst. If, as I have often seen, in other situations, the hæmatine, in its turn, disappears, we have resulting a serous cyst, properly so called. When the serum is mixed up with the more solid matters, so as to form a sort of bouillon, there results a mucilagenous mass, more or less deeply coloured, according to the proportion of hæmatine that is present; or a pultaceous brown matter, reddish, or more or less homogeneous, if the proportion of coagulum be considerable. I have so frequently observed these successive transformations in collections of blood in other parts of the body, that I cannot but admit their probability, or at any rate their possibility, here.

Oleaginous cysts, of some months' duration, are still less capable of spontaneous disappearance than the sero-sanguineous variety. All that has been said respecting the prognosis of the latter is equally applicable to them. I may even add, that mucilagenous cysts are more rebellious to the natural efforts of the constitution, and to topical remedies, than the other species. We must not, therefore, be too sanguine of curing them, without resorting to surgical measures. As, however, they are not serious

in themselves, we may, should the patient desire it, attack them by local measures, such as iodine ointments, plasters, and blisters, premising, however, that such remedies almost always fail. When these have been vainly employed for some months, we may recommend the patient to leave the tumour alone, if the idea of an operation be very terrifying to her; for if the tumour continue to grow, and a radical cure be desired, there is only one surgical operation that can reasonably be recommended.

An incision, extending through the whole cyst, will answer, when the walls are supple and vascular; for, by keeping the wound open, we involve the whole extent of the morbid cavity in the suppuration. The process is then similar to that which occurs in a large open abscess, dressed from the bottom. The seton is at once less certain, less convenient, and equally painful. Caustics also present no advantages whatever. In consequence of the oleaginous condition of the fluid, and the somewhat nappiform character of the surfaces of the cyst, irritating injections tend to provoke suppuration rather than purely adhesive inflammation. Less adapted than the serous cysts to the granulating process necessary to the cicatrization of the purulent surfaces, the mucilaginous cysts, more than others, seem to justify extirpation in preference to incision. Nor should we hesitate to prefer extirpation, if the walls of the tumour are thick, lardaceous, or osseous. We can understand how the wound is then much more favorably circumstanced as to the healing process, whether immediate or secondary, than after a pure and simple incision into the whole extent of the tumour. In the first case, in fact, the tissues are healthy, and the wound is simple; whilst in the other, there is a serous or pseudo-mucous cavity, the parietes of which are not, by any means, equally well adapted to complete and immediate adhesion; or to that inflammatory action, which the healing of wounds in general requires. Finally, extirpation of the cysts is a rapid operation, less painful than patients imagine, and is not in itself exposed to any serious danger, whilst, at the same time, it unquestionably offers the greatest amount of security.

The preceding observations, and all that has been said hitherto respecting cysts, whether purulent, milky, serous, mucilaginous, or bloody, &c., concern only those which are essential, that is to say, those which have shown themselves as cysts from the very commencement. In speaking of adenoid tumours, and of some forms of cancer, I shall have to recur to them; but only then as

complications, and symptomatic cysts, dependent on the principal disease.[1]

[1 M. Velpeau appears to have misapprehended the views entertained by Sir A. Cooper, relative to these various forms of cystic and cystoid disease of the mamma. They were much more correct than is generally supposed, and it can hardly be admitted, that in England, at least, the subject of cysts in the breast, has remained so imperfectly understood as the author believes. Indeed, the pathology of this class of diseases is considerably further advanced than might be imagined on a perusal of M. Velpeau's own observations.

There does not appear to be any evidence, that Sir A. Cooper ever confounded the true hydatid, the echinococcus hominis, as it is occasionally met with in the mamma, with any other form of cystic formation.

The chapter on the subject, in his 'Surgical Lectures,' he entitles "Of the Hydatid or Encysted Tumour of the Breast,"[1] using the term, as at that time was commonly done, in its generic or collective sense—many writers of the period speaking of spurious and true hydatids—and he afterwards proceeds to distinguish, as follows, between the varieties that he has met with: "It appears, then, that there are three kinds of hydatid or encysted tumours in the breast. One, in which the production is a globular hydatid, like that which is considered to be a distinct animal, and which is now and then met with in different parts of the human body; the second, a cyst, composed of numerous lamellæ, like the crystalline humour; and the other, a bag, containing serum, and probably produced by an adhesive process, shutting the communication between the cells of the cellular tissue, in which secretion proceeds."[2]

In his 'Illustrations of the Diseases of the Breast,' in chap. iii, p. 20, "On the Hydatid Disease of the Breast," he speaks as follows: "The term hydatid might be applied to every watery tumour, and it may therefore here with propriety be employed. But it will be seen in the sequel, that there are four species of these swellings in the breast, three of which are unmalignant; but one is of a malignant nature." It is well known, that Sir A. Cooper did not complete the second part of his work on the breast, which was to have been occupied with the malignant affections of the organ; and he therefore describes only the three varieties spoken of in his 'Surgical Lectures.' Of the true hydatid, he says, "The third species of hydatid which is found in the breast is the *animal* or globular;"[3] and then proceeds to give instances, in which similar animals have infested other organs of the body.

Of the second variety spoken of in the 'Surgical Lectures,' as "a cyst composed of different lamellæ, like the crystalline humour," there are several preparations in the Museum of the College of Surgeons. The cysts are all small, and contain a substance like spermaceti, concentrically arranged in thin scrolls. They were called "pearly hydatids."

That the genuine hydatid animal was met with in the human breast by Sir A. Cooper, and clearly distinguished by him, there can be no doubt, nor can it be questioned, that other surgeons have also encountered it, though rarely. The concentric laminæ com-

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[1] Sir A. Cooper's 'Lectures on Surgery,' by Tyrrell, vol. ii, p. 163, ed. 1825.

[2] Op. cit., p. 173.

[3] Op. cit., p. 45.

posing the wall of the hydatid, forms a striking object under the microscope, and affords an easy method of distinguishing it from every other kind of cyst.

Such an arrangement of the cystic and cystiform diseases of the breast, as should accurately represent the present state of our knowledge on the subject, would probably be as follows:

A. Cysts formed by the dilatation of natural tubes of the breast, viz., the sebaceous ducts of the skin, and the milk-ducts.

B. Cysts produced by an adhesive exudation in the areolar tissue analogous to that process which results in the formation of artificial bursæ in various parts of the body.

C. Cysts formed by aberrant nuclei or cells, and perhaps, by effused clots of blood, in a similar manner to many of the cystic formations in the kidney.

D. Cysts formed by genuine hydatids, of which I believe only one species has been met with in the breast, viz., the echinococcus hominis.

The first three varieties appear to become capable, under certain circumstances, of bearing solid formations upon their inner walls, which are occasionally attended with an amazing rapidity of growth, analogous to what occurs in the compound cysts of the ovary. It is probable, that the varieties A and C are most subject to this phenomenon, which is frequently observed to proceed with a sudden access of vitality, under the stimulus of the lactiferous secretion. The cauliflower-like masses which sometimes shoot out of a diseased mamma, and present the most formidable appearance, within a few weeks of confinement, are familiar to most surgeons.

The variety B would include the third species, spoken of by Sir A. Cooper, in the extract quoted from his lectures, and probably, also, that form signified by Mr. Birkett, in the following words:

"Cysts produced by a peculiar action in the fibro-cellular envelope of the gland tissue, and the consequence of a morbid state of the function of nutrition."[1]

All distinctions between these various cysts, founded on the characters of their contents, as "serous," "sero-sanguineous," "mucous," "hæmatic," and the like, seem to be of an artificial character, and altogether elude what is essential and peculiar in them. It is easy to see, how endless will be the varieties of these contents, according as the cysts have milk, or blood, or any of the constituents of these fluids effused into them, and according as absorption has proceeded to various extents in each, and the collections have become inspissated or modified by time.—Ed.]

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[1] Birkett, 'On Diseases of the Breast,' p. 650, 1850.

TABLE OF THE

Date.	Species.	Age.	Occupation.	Seat.	Cause.	Treatment.
1830	Sero-sanguineous.	36	—	Left breast	—	Extirpation.
1836	Hæmatic.	27	Servant.	,, ,,	A violent blow.	,,
1837	—	15	—	Right breast	A fall.	——
1838	Serous.	45	—	,, ,,	—	Extirpation.
,,	Sero-mucous.	22	Labouring woman.	—	—	,,
1840	Serous.	—	—	Left breast	—	Puncture ; injection of iodine.
,,	,,	—	—	,, ,,	—	,, ,,
1842	,,	28	Servant.	,, ,,	—	Iodide of lead ointment; exploratory puncture.
1843	,,	—	—	,, ,,	—	Puncture and injection proposed and refused; caustics.
1844	—	53	Labouring woman.	,, ,,	—	——
1846	Serous.	40	Cook.	Right breast	—	Puncture; extirpation.
,,	,,	44	Servant.	—	—	——
,,	Hæmatic.	30	Sempstress.	—	A blow.	——
1847	Serous.	66	,,	Right breast	—	Puncture; injection with iodine.
,,	Hæmatic.	24	Servant.	,, ,,	A blow.	Extirpation.
1851	Serous.	47	Housemaid.	,, ,,	—	,,
1852	Meliceric.	43	—	,, ,,	—	Puncture; extirpation.

LACTIFEROUS CYSTS.

20 years old; had borne 2 children; recently confined; tumour of enormous size; on
38 years old; confined a month; right breast; puncture; escape of six ounces of whitish
Young woman, had been nursing for fifteen months; tumour in right breast, of the size
29 years old; confined two months; incision; escape of fluid resembling milk; extirpation

DIFFERENT CYSTS.

Complications.	Termination.	Duration.	Observations.
—	Cured.	—	Numerous cysts of six years' duration.
Erysipelas	„	41 days.	
—	Remained in same condition.	10 „	There was a slight discharge from a fistulous opening.
—	Cured.	—	
—	„	—	The cyst was filled with a greasy, clotted fluid, with little whitish oil-like particles. The walls of the cyst were ossified.
—	„	15 days.	
—	„	—	Fresh cysts formed in 1843, and got well under similar treatment.
—	Remained in same condition.	10 days.	Refused any operation.
—	„	—	Had been already operated on, for an adenoid tumour of the same breast.
Adherent to the cartilages.	„	2 days.	Refused any operation.
—	Cured.	1 month.	
—	„	31 days.	
—	„	47 „	
—	„	20 „	
Erysipelas.	Died.	50 „	The tumour weighed 2lb; it was lobulated, elastic in some points, and fluid in others. It broke up into masses, lobules, granulations, and granules.
—	Cured.	25 „	Some of the lobules resembled mammary tissue, and from microscopic examination, M. Lebert pronounced it to be mammary hypertrophy.
—	„	12 „	There was a fibrous, dull grey envelope, like bouillon, of a fetid, nauseous odour. Under the microscope were found crystals of cholesterine, epithelium scales, pavement epithelium, and fat globules.

puncture, escape of 10lb of pure milk; cured. (Case of Scarpa's.)
coagulum mixed with yellow serum; cured. (A. Cooper.)
of an egg; incision; escape of a yellowish matter. (Dupuytren; case incomplete.)
of the cyst; cure. (Jobert, case published by M. Forget.)

III.—ADENOID TUMOURS.

The tumours now to be considered, have not been hitherto sufficiently investigated, but have generally been confounded, both in surgical works and in practice, with scirrhous, encephaloid, and especially with occult cancer and benign scirrhus.

I described them long ago[1] under the name of *fibrinous tumours*, and more generally in my lectures as *fibrous, scirrhoid*, or *adenoid* tumours.

M. Cruveilhier has also spoken of them as *fibrous tumours*. A. Cooper called them *chronic mammary tumours;* and M. Vidal, in common with most microscopists in the present day, prefers the name of *tumours from partial hypertrophy of the mamma*. They grow in the breast, and remain for an extended period, if not for ever, distinct from cancerous tumours, from which it is important to separate them, and with which, in the present day, they need no longer be confounded. Indeed, I endeavoured to distinguish them so early as the year 1824. What I then stated, in giving an account of the operations practised at the hospital of the Faculté,[2] was as follows:

Case 1.—A patient operated on for a tumour of the breast, on the 13th of August, 1824, who was well again by the 1st of September, remained without return of the disease, at least until the following April, when we lost sight of her; but it must be said that the tumour which was removed, notwithstanding its indurated appearance, was far from presenting the characters of scirrhus. It would seem, I then observed, "as if there was a degeneration or transformation of the cellular tissue, and not a new formation. In a word, that it was a mass of fibro-cellular tissue, indurated by the morbid process; so that, if I am not deceived *as to the utility of the distinctions which we have elsewhere endeavoured to establish respecting carcinomatous* tumours, the patient in question may count on a radical cure."

The following case also shows how, even at that time, I endeavoured to bring analysis to bear on the study of cancers generally, and on tumours of the breast in particular.

[1] 'Dictionnaire de Médecine,' vol. xix.

[2] 'Archiv. Générales de Médecine,' vol. xiii, p. 526.

Case II.—Dupuis, a cook, æt. 35, a large strong woman, who in her youth had suffered from enlarged cervical glands, came into the Hôpital des Cliniques, on the 17th of January, 1825, in order to be treated for a tumour which had existed for some time in the right breast. She had been confined twenty-two months before, and subsequently had noticed the existence in her breast of a moveable, indolent tumour, the size of an almond. A hemlock plaster was applied, without checking the growth of the swelling. She was confined again sixteen months subsequently, and from that time the breast rapidly increased in size. Fifteen leeches were applied without benefit; afterwards another hemlock plaster, and subsequently, in the space of a fortnight, twenty-five more leeches, in three different batches, all of which measures the patient believed to have increased both the pain and the size of the swelling. The tumour, which was round, moveable, nodulated, and apparently of light weight, was *nowhere adherent to the skin*, which seemed to be healthy throughout. It was the size of the fist, and occasionally the seat of pricking or slight shooting pains. Menstruation had been regular.

The operation was performed on the 25th of January, and after some trouble and inconvenience, the patient recovered so as to leave the hospital on the 25th of February. I saw her some years afterwards, at which time there had been no return of the disease. The tumour was formed of globular masses, and entirely independent of the natural tissues of the part; the majority of the nodules were *elastic*, as if *fibrous*; others were softened like jelly, or slightly caseous bouillon; all of them were united together by a web of fibro-cellular tissue, and I then expressed my views of the nature of the disease by calling it a *colloid tumour*.[1]

[1 The English reader will hardly require to be reminded, that these observations relative to the confounding together of such tumours as here described, with "scirrhus," "encephaloid," or "blind cancer," can have no reference to this country; and, it certainly appears strange, that after the descriptions of Sir A. Cooper and Mr. Lawrence, such a mistake should be common, even in a foreign land; still more strange is it, that, as will hereafter be seen, by M. Velpeau's remark, even so late as the year 1844, during a discussion at the Académie de Médecine, several medical men maintained that the innocent were undistinguishable from the malignant tumours of the breast. It is impossible to read over the admirable account of the chronic mammary tumour, in Sir A. Cooper's work, which was published in the year 1829, without acknowledging that he has almost exhausted their history; and in all points, save in their microscopic characters, that he has anticipated what has since been said about them. One of the cases quoted in that book, had been operated on by Sir Astley, in the year 1815, whilst M. Velpeau's earliest case appears not to have occurred until the year 1824.—Ed.]

§ 1. GENERAL OBSERVATIONS.—These tumours are by no means rare, for I am able to give a resumé of sixty cases which were clearly diagnosed in my own practice, without taking account of a large number more, the particulars of which have not been accurately preserved. They occur chiefly in unmarried females, or in women who, though married, have never borne children. I have met with them pretty often in young women from sixteen to eighteen and from twenty to twenty-five years old; but also amongst virgins from thirty, or thirty-six to forty years, and even from sixty to seventy-two years.

Nuns of forty-five or even fifty-five years have also furnished me with several cases, and I have seen them in married women without families. However, they have occurred tolerably frequently in women who had become mothers, and even in persons who were engaged in suckling.

Amongst fifty-five cases, they occurred eight times in patients from fifteen to twenty years of age; eighteen times from twenty to thirty; twelve times from thirty to forty; fifteen times from forty to fifty; four times from fifty to sixty; three times from sixty to eighty; and on one occasion at eighty-five years, contrary to the general opinion, which attaches this class of tumours almost exclusively to an early period of life. Moreover twenty of my patients had borne children, which shows that the condition of celibacy is not alone exposed to them.

Though they are usually single, it is not uncommon to meet with several in the same patient, at times even in the same mamma. The breasts of a lady, who consulted me in 1832, were both full of them, the majority of the tumours being as large as a chestnut or walnut, or even a hen's egg. More generally they occur successively in both breasts. A patient whom I operated on in 1840, had had one removed from her other breast ten years before. A young woman, on whom I operated in 1846, has recently noticed the growth of a second, and still later of a third, in the other mamma. In an unmarried woman of forty-five, I found one as large as a small melon in each breast, which had grown at an interval of four years from each other. The following are the notes of the case as taken by the dresser:

CASE 1.—L. H—, æt. 45, of good constitution, was admitted into the hospital on the 4th of February, 1846, for a tumour in the left breast. It had been perceived for four months, though

it had probably commenced long before. On examining the other mamma, another tumour was discovered similar to that in the left breast, but smaller in size, and of the existence of which the patient had no suspicion. The swelling in the right breast presented the following characters:—Examination detected irregular lumps, and in the intervals between the bosses there seemed to be fluctuation, as though from cysts filled with fluid; but near to the lobules themselves I found the resistance of solid masses. This tumour was moveable and unadherent to the deep-seated parts, or to the integuments; it glided beneath the skin, and was the seat of some pain and shooting. It had some of the characters of cancer; but encephaloid tumours do not remain for so long a period without contracting adhesions to the skin, and without presenting a degree of redness on the summit of the adherent points. These tumours were in fact elastic, and either fibrous or adenoid. An operation was performed on either breast on the same day, and in about six weeks the patient had recovered so as to return home.

The tumour from the left side was lobulated, firm, elastic, and solid throughout, streaked, of a greyish rose colour, destitute of any juice, and distinct from the mammary tissue.

That from the right side presented the same characters in one half, but was softened in the other, so as to appear to be composed of a mixture of colloid, encephaloid, and even tuberculous masses. Neither to the naked eye nor under the microscope did it present any cancerous matter. The cure, moreover, has remained permanent up to the present time, 1853.

Although the development of adenoid tumours usually occurs very slowly, and almost insensibly, the contrary is also occasionally noticed. In one of the patients on whom I operated, the tumour had attained the size of an ostrich's egg in less than a year. Although I agree in the opinion, that when they have once grown to a certain size, they sometimes remain stationary, we must yet be aware that they may, on the contrary, continue to increase, soften in some portions, and eventually ulcerate. A. Cooper believed that they rarely reached a large size; but, at the same time, he quotes, as well as the case reported by Mr. Bond, another which occurred to himself, which show that, in some instances, they may reach as much as a pound or a pound and a half in weight. Judging from my own experience, it would

appear that they are scarcely less variable in size than malignant tumours. I have met with a considerable number which for a long time, or for an indefinite period, remained of the size of a hazel nut, a walnut, a chestnut, or small egg; and I have also seen many which were as large as a hen's or an ostrich's egg, or of a small melon, or even as the head of a child or of an adult.

The *mobility* of these adenoid tumours is one of their most constant and manifest characters; and, except when the mamma is surrounded with a quantity of thick adipose tissue, they move about in the midst of the tissues with the greatest facility, under the pressure of the finger. This circumstance, which I pointed out so early as 1824, is so characteristic, that from its presence alone, we may almost affirm that the disease is a new formation, and not a transformation of the elementary structures of the part. In displacing these tumours, we are sensible that no part of the gland follows them, in whatever direction we cause them to roll.

They are thus distinguished from a number of tumours, which really involve the mamma, and of which I have either spoken already, or shall speak hereafter. Sir A. Cooper and Bérard also noticed this characteristic, but as they still believed in the union of the tumour with the mammary gland, the consequence was, that they confounded purely hypertrophic tumours with genuine adenoides. Moreover, they erroneously supposed that these tumours were always, or nearly always, subcutaneous; but I have been enabled to ascertain by dissection, on many occasions, that they may occupy, almost indefinitely, all depths and portions of the mammary region. I have met with very large ones, even in the very centre of the gland, so that to reach them it was necessary to divide a thickened layer of mammary tissue, whilst they rested on another glandular layer behind. Even in those cases in which the anterior surface of the tumour is plainly visible under the skin, the cyst is still, as it were, wedged in at the base, amidst the separated secretory lobuli. It is true, however, that adenoid tumours sometimes do exist entirely between the skin and the gland; and, I may add, that on two occasions, I found them in the submammary tissue.[1]

[1 It appears that M. Velpeau has misapprehended, and consequently misrepresented Sir A. Cooper's views. There does not seem to be any ground for the statement, that he confounded purely hypertrophic tumours of the breast with genuine adenoides. Sir Astley's statement is, that "the impression made upon the mind during the dissection

I do not know whether it be possible to affirm which region, or part, of the breast is most subject to them. In the patients in my table, the tumours occurred twenty-two times on the right side, and twenty-seven times on the left. They occupied both breasts in five patients; but in the others, the side affected was not noted.

Perhaps, but I have no precise notes on this subject, I have met with a greater number above the nipple than elsewhere, rather towards the upper and inner half, than below and on the outer side. Nevertheless, I have seen very large ones, in the latter situation; and in a woman who had an enormous tumour on each side, they both occupied this locality.

There does not, however, seem to me to be any fixed rule on the subject. In a woman who had been operated on on one side, and came to the hospital to have a second tumour removed from the opposite breast, they were situated in two different regions. In a young woman whom I operated on twice, the tumour in the right breast was below, and on the outer side; whilst that in the left breast, was at the inner or sternal side. And I might multiply similar instances *ad infinitum*.

M. Lebert is evidently mistaken in affirming that they are hardly met with except at the circumference of the organ. The desire of referring these tumours to hypertrophy of some glandular lobule, must have given rise to this opinion, which, however, is daily contradicted by clinical observation.

Although generally lobulated, and irregular, or roughened on the surface, both when examined in situ, and after removal by operation, these tumours are sometimes smooth enough to suggest,

of the tumour is, that nature has formed an additional portion of breast, composed of similar lobes, but, perhaps, differing in structure, in the absence of lactiferous tubes." He does not assert that the fact is so, he only says, that regarding the naked-eye appearances, we might suppose that it was so; and while affirming that the tumour "grows from the glandular structure of the breast, and remains connected with it by a thin process of a similar structure," he also states, in another place, that "it is an extremely moveable swelling, being chiefly attached by a portion of *tendinous aponeurosis* to the glandular structure of the breast." This is a very different thing to the views of those observers, whom M. Velpeau has in his mind, who hold that they arise from "the hypertrophy of some glandular lobule."

Respecting the situation of these growths, also, Sir Astley distinctly states, that such a tumour generally appears to be, and is superficial, and easily distinguished in all cases, "*excepting*, if it spring from the posterior surface of the breast, when it is deep seated, and its peculiar features are less easily discriminated." Sir Astley nowhere says, as by and by it will be seen M. Velpeau represents him as saying, that they are attached to some lobule of the gland, "of which they seem to be the continuation."—Ed]

at first, the idea of a cyst, or tumour of another species. On the other hand, some cysts are surrounded with such well-defined lobules as to simulate adenoid tumours. I must confess to having made this mistake myself, on two or three occasions, which, however, is the more excusable, since some of the lobuli of an adenoid tumour, are susceptible of transformation into cysts of different kinds, or of becoming softened, like encephaloid tumours.

§ 2. PATHOLOGICAL ANATOMY.—Variable, both in size, consistence, and in the manner in which they are connected with the neighbouring tissues, adenoid tumours have the common characteristics of being situated amidst the natural structures of the part, without forming any portion of it; of lying in the midst of the organs like foreign bodies; and of bearing, just at first sight, no resemblance to any of the natural tissues.

Their size may vary between a hazel nut, and an adult head. Usually, they are somewhat lobulated, irregular, elastic, and sometimes suggest the notion of a rarefied, hypertrophied, lymphatic gland. The section of some of them is slightly lobular, and friable; others resemble long-standing concretions of organized fibrine. The majority, examined with the naked eye, are of so firm and homogeneous a texture, as to call to mind the structure of the breast itself, or of genuine fibrous tumours. On careful examination, we notice, in different sections, that they have a shining, granular, or seed-like appearance. Pressure fails to extract from them the milky juice of scirrhus, and they have neither the homogeneous nature, nor the softness, fungous, filamentous, and vascular appearance of encephaloid. If, indeed, they have the elasticity, the tenacity, or the cohesion, and the grayish aspect of fibrous tumours, they differ from the latter, in the circumstance that they are, in appearance at least, destitute of regular fibres, or of any stroma comparable to any of the healthy tissues of the body. They spread out, flatten, involve, or displace the tissues, without producing any degeneration in them, and it is generally easy to enucleate and detach them, without destroying the sort of sac in the mamma in which they are developed. Without this peculiarity, they might be confounded with an hypertrophied mammary lobule. It is, in fact, the granular or lobulated tissue of the mamma itself that some of them resemble the most; but their independence amidst the natural organic strata is too manifest for us not to be inclined to admit them to be new productions.

Some of the most practised microscopists, MM. Mandl and Lebert amongst others, to whom, since the year 1840, I have sent a great number for examination, have, like myself, never detected in them cancerous, or tubercular, or pus cells. At first only the elements of the blood or of fibro-plastic tissue were discovered in them. Since 1839, the year in which I described them in the 'Dict. de Médecine,' M. Lebert and others have arrived at the conclusion that these tumours are merely hypertrophied mammary tissue. Terminal cul-de-sacs, single or in groups, in the form of grapes or oak leaves, and a considerable proportion of epithelial cells, seem to form their basis. In short, according to the microscope, an adenoid tumour is nothing more than a partial hypertrophy of the lobules of the breast.

In a practical point of view, it is of little consequence, whether the tumour arise from mammary hypertrophy, or from transformation of some exudation—but there is here involved a question in pathology difficult to discuss. In my opinion, the formation of tumours in general is naturally influenced and often modified through the dominance of the neighbouring parts.

I made the observation long ago, and now repeat it, that accidental formations have a marked tendency to assume some of the characters of the organ in which they may happen to be situated. Thus, in the uterus, the tumour becomes really fibrous, so that occasionally it may even be confounded with the tissue of that organ itself. In the prostate, morbid products have also much affinity with the tissue of the organ which surrounds the root of the urethra. There is here, I apprehend, a general law which it is important to investigate in its various applications.[1]

It may be said that in the case of plastic or fibrous effusions, and also in the fibro-plastic elements, each organ endeavours to assimilate the morbid products in its vicinity to its own special nature, but without having the power of doing so completely. In this way absolutely fibrous tumours have no existence, not

[1 The law here referred to has long been recognised. Nearly five and twenty years ago, Mr. Lawrence in his paper on "Tumours," published in the 'Medico-Chirurgical Transactions,' enunciated the fact in the following terms :

"It may be observed generally, that the accidental productions constituting tumours frequently correspond in their structure to the parts in which they are produced. Thus we have masses of fat formed in the subcutaneous adipose tissue; and, on the other hand, tumours of cellular structure occur in that kind of cellular tissue which does not contain fat." ('Medico-Chir. Trans.,' vol. xvii, p. 10.)—Ed.]

even in the uterus itself. The best plan, then, will be to accept a new term, which may be applied to that species of products of which I am speaking, whatever be their seat. It must readily be admitted, that the name *fibrinous tumours*, which points to an origin which may be doubtful, is not less objectionable than that of fibrous tumours, which points to a character that is almost always wanting; that, therefore, of *adenoid*, which refers merely to form, seems to me preferable. If adenoid tumours had always the same aspect and physical characters, at whatever period of their growth they are examined, the difficulty would be diminished. But besides that, according to the period of their development, they present a very variable colour and density, it has also appeared to me that from the very commencement, many of them differ much from each other. I have seen them having a *granular* appearance, imitating tolerably well a cauliflower with very close tissue, or a pomegranate, when they have been for some time in maceration, or when their surface has been torn by the scalpel or by pressure. However, even in this form, they preserve a degree of density and cohesion that makes it difficult to crush the granules or the lobules. In other cases, the lobules and lamellæ of the tumour have had some analogy to the leaf of an oak tree, as respects the arrangement of their layers, but always preserving the resistance of fibro-cellular tissue. I have also seen some which, although slightly granular, were homogeneous enough to suggest the notion of a glandular lobule, of a sort of artificial gland. Finally, there are some so soft and friable, and so like an old fibrinous concretion, that they break down under the finger without much difficulty.

Sometimes, when they acquire a great size, and are growing older, cysts form in them; their lobes or lobules soften, and undergo striking changes, to which I shall presently have to return.

The description of A. Cooper, A. Bèrard, and Dr. Warren, show that their *chronic mammary tumours* include those here alluded to. The term which they employed may, however, give rise to misunderstanding; for what can this name signify, if not the remains of some inflammation, or engorgement of the mamma? Now it, is quite evident, that A. Cooper, and the surgeons who have followed him, had no intention whatever of speaking of inflammation, when they described the chronic mammary tumour.

But, besides this, such a name ought not to be retained, inasmuch as all indolent tumours of the breast, equally deserve to be called chronic mammary tumours.[1]

A. Cooper and Bérard were struck with one circumstance: namely, that the tumour they were speaking of, had some resemblance to the tissue of the breast, as well as the same tint, consistence, and irregular and lobulated aspect. They added, but erroneously, that they were usually attached by a thicker or thinner pedicle to some lobule of the gland itself, of which they seemed to be the continuation.[2] If the analogy between the tissue of the breast, and that of adenoid tumours can not be absolutely denied, still it must be confessed, that the identity of these tissues is evident only under the microscope. However, if it be true, as I have suggested above, that the structure of a new formation may nearly approach to that of the natural tissues, one does not see why morbid products in the breast may not, as well as elsewhere, assume the characters of the organ in which they are situated, without, on that account, having formed from the very first, an integral part of the gland.

I have so often convinced myself by dissection of the complete independence of adenoid tumours—and it has so often occurred to me to isolate them, like a lipoma or a steatoma, or a fibrous tubercle of the uterus, and to demonstrate that they were united to the neighbouring tissues merely by juxtaposition, agglutination, or interweaving of the inequalities of the surface, that I cannot at all admit the glandular pedicle spoken of, as one of their essential characteristics.

Except in this respect, all the cases in A. Cooper's, Dr. Warren's, and M. Bérard's tables, refer to the tumours called fibrinous, fibrous, or adenoid, only A. Cooper and M. Bérard seem, as well as M. Lebert, to have confounded together, adenoid tumours with those which are purely hypertrophic. Supposing that fibrinous, fibrous, and chronic mammary tumours are, in fact, three distinct species in an anatomical point of view, it is not the less true, after all, that as respects their diagnosis,

[1 The name adenoid, which M. Velpeau prefers, is derived from *αδην*, a gland, and *εἶδος*, aspect; so called because these tumours are gland-like growths, which is precisely the thing which Sir A. Cooper called them, and described them to be. He even proposed for them, instead of "chronic mammary tumour," the term "lobulated mammary tumour."—Ed.]

[2 Vide note, at p. 285.

etiology, prognosis, and therapeutics, what has been said by these authors respecting the one, is equally applicable to the other two.

§ 3. ETIOLOGY.—The exciting cause of adenoid tumours has hitherto remained in profound obscurity; and it is much the same as respects their nature. In my memoir upon 'Contusions,' in the year 1833, whilst engaged upon the subject of the changes which the blood may undergo when arrested or effused in the midst of the different organs, I inquired whether certain mammary tumours did not occasionally originate in some clot, or particle of fibrine or plastic matter. At the present time, I have no doubt that albumen, milk, pus, or blood coagulated in the living tissues, may constitute the origin of various tumours. Amongst other things, I have seen in the femero-tibial articulation, little masses of concrete pus on the point of becoming organized, and vascular on the surface of the cartilages. In the mamma I have even met with little particles of albumen in the form of solid nuclei, which were already furnished with vessels, independent of those of the gland itself. I have so readily followed, in the breast as elsewhere, the different phases which clots of blood or exuded materials may undergo, in their transformation, that I can have no hesitation in positively affirming the existence of tumours, which have their origin in blood, albumen, or pus; and, on the other hand, being aware that most patients attribute them to some blow, contusion, squeeze, or chill, I have come to the conclusion that this is one of the most usual causes of adenoid tumours of the breast.

Thus, out of fifty-three cases, thirty-four patients attributed their disease to a blow, without taking account of those who may have forgotten and paid no attention to such a circumstance.

Moreover the breast, from its form, position, and functions, and from the articles of dress which envelope it, is so much exposed to chills, squeezes, contusions, and external violence of various kinds, that it is difficult to affirm the impossibility of such a cause having been in operation in any particular case. Having observed, that in patients whose menstruation is irregular, and especially in unmarried women, the mammæ are sometimes subjected, at certain periods, to sanguineous congestion, and ecchymosis, it has appeared to me probable that slight effusions of blood may spontaneously occur in the parenchyma, or on the surface of the

organ. Is it unreasonable to seek for a coincidence favorable to my hypothesis in the fact, that it is chiefly amongst persons whose menstruation is painful or irregular, that we meet with adenoid tumours?

In the present day, moreover, that supposition approaches very near to demonstration; for chemical analysis has discovered, in the tumours which I call hæmatic, nothing but the elements of blood or fibrine. Several of these tumours, which were microscopically examined, so clearly showed that the foundation of their structure consisted of the elements of fibrine, that M. Lebert has devoted an article specially to them, in his 'Pathological Physiology.'[1]

If, then, the hæmatic or albuminous origin of certain solid mammary tumours be no longer doubtful, it remains only to observe, whether all adenoid tumours, or at least some of them, do not originate in this way.

Considered in this point of view, the question still presents a good deal of difficulty.

If, in the present day, it be almost demonstrated that blood, albumen, pus, milk, &c., when once effused, are susceptible of various degenerations and transformations, observers soon cease to agree in their opinions, when the question arises respecting this or that particular tumour, the evolution of which is far advanced, whether it has really originated in this or in some other way. Having been the first, in the year 1838, to assert the doctrine, that certain cysts of the wrist, and certain moveable bodies in the articulations, were often nothing else than concretions of blood or plastic matter, I only succeeded in rendering this opinion plausible, by demonstrating the different phases of each morbid product, from its origin to its perfect condition. Having had the opportunity of showing, in a deposit of blood which was still recent, a separated clot, already reduced to fragments partially decolorized; having, in another case in which the disease was of somewhat longer standing, found fragments which were harder, and smoother, and which presented, in various parts the appearance of cartilage or loose bodies, at the same time that the rest of their substance preserved the characters of blood; and, finally, having recognised, at a more advanced period, in a hæmatic cyst, well-marked clots of fibrine, as well as those bodies

[1] Vol. ii, pp. 83—97.

or granules called cartilaginous, my doubts could no longer continue.[1]

However, the mamma is less favorable than many other organs, to the investigation of these productions. The density of its tissue, and its special functions, prevent our easily following the evolution of the various exudations of which it may be the seat. I have many times seen depots of blood from contusions of the breast, presenting the form either of liquid or of coagulated blood, or of isolated, friable clots of fibrine, or of fibrinous solid concretions, wet or dry; and I have also seen granulations and masses already vascular and living, confused together by their position with the natural tissues; in short, long after the accident, I have found fibrinous tumours in one situation, and the not doubtful characters of a sanguineous concretion in another. When it is observed, moreover, that the majority of tumours may result from an exudation of some matter derived from the fluids, it seems easy to admit that certain innocent mammary tumours may at first be of hæmatic nature; but it is not the less true, that when completely developed, many of them present such an organization, and such characters, that many practitioners are very doubtful on the subject.

If adenoid tumours were simple partial hypertrophies, they should, it seems to me, in all cases, be connected with the mammary gland by some pedicle: the more voluminous the tumour, the larger, more evident, and solid should be the pedicle.

Could a tumour, which occasionally attains the size of two adult heads, and is larger than the mamma itself at the period of lactation, exist, if it were merely an hypertrophied glandular lobule, without possessing an enormous pedicle, or one or more roots formed of vessels and nerves, and especially of milk-tubes, equally hypertrophied? Now it is certain that the most careful dissection has never shown any such continuity between these tumours and the mammary tissue; I have, on the contrary, in almost all cases, both before and after the operation, ascertained their entire independence. Should it be objected, that fatty tumours, which are certainly the result of simple hypertrophy, frequently have no root or manifest pedicle, I answer, that fat, an entirely accessory substance, almost inert in the organism,

[1 The most probable explanation of these loose bodies in the ganglions of the wrist and articulations is, as shown by Rokitansky and others, that they originate in the villi of the synovial fringes.—Ed.]

cannot in any respect be compared with the mamma, which is an essential organ, amongst the most complex in structure, and elevated in function.

The analogy, or, if one will, the identity in composition of these tumours, both to the naked eye and under the microscope, does not seem to me to obviate all doubt. Does not the fibrous tumour of the uterus resemble, in almost all points, both to the naked eye and microscopically, the tissue of the womb? Nevertheless, no one, since the work of Bayle, excepting M. Lebert,[1] has dreamed of making them partial hypertrophies, or of denying them the title of independent bodies, and accidental productions. Yet more, the mamma, which is, in fact, susceptible of partial

[1] 'Compte Rendu de la Société de Biologie,' t. iv, pp. 68.

[It is stated by Vogel, that the so called fibrous tumours of the uterus, are in reality muscular growths; but by most observers, they have been described as fibrous tumours, containing a greater or less quantity of muscular fibre (organic) mixed up with them. Dr. Bristowe furnishes an account of their structure, as examined in the pregnant uterus, and the conclusion to which he comes, that they are essential muscular tumours, absolutely identical in composition with the uterus itself, seems to be supported by convincing evidence. M. Lebert, quoted above by M. Velpeau, denies them the title of independent bodies, but considers them as partial hypertrophies. It is well known, that fibrous tumours of the uterus grow during pregnancy, so that a previously small tumour may, under such circumstances, become a very serious obstruction to parturition. Now observes Dr. Bristowe, "the preceding view of their nature," namely, that they are muscular tumours, "may serve to impress the fact more vividly on the mind, since it shows that they *must* grow, not in that vague sense which is conveyed in the statement, that they grow from partaking in the activity of neighbouring structures, but in that positive and determined manner which is expressed by the fact, that they must, from their very nature, at least, attain a bulk the ratio of which to its former bulk is that of the gravid to the unimpregnated uterus."

It seems to me a legitimate inference, therefore, that if adenoid tumours are examples of hypertrophied mammary tissue, and bear the same relation to the mammary gland that these uterine tumours do to the uterus, they also ought to increase in size during the increased activity of the parts involved in the preparation for, and in the accomplishment of, the act of suckling.

So far as I am aware, no such fact has been noticed; but, on the contrary, it is stated by Sir A. Cooper, that they seldom fail to *disappear* under the first pregnancy, and the suckling which succeeds it. Of this he quotes examples.

Again, the tissue of the unimpregnated uterus is very faintly muscular; it becomes characteristically so only during pregnancy, and it is the same thing with these so called "fibrous tumours." Their muscularity is but faintly marked, during the greater period of their lives, and hence it is only during a very short interval that their true nature is discoverable.

I am not aware, that the structure of the "adenoid tumour," of the "chronic mammary tumour," or by whatsoever name the growth may be called, is more distinct at one period of life, or more glandular at one time than it is at another. Such a term as

hypertrophy,[1] gives rise also to tumours very different indeed from genuine adenoid growths. Perhaps the opinion which I am questioning arises, in great measure, from the circumstance, that A. Cooper, A. Bérard, M. Lebert, and most microscopists, confound together, under the same name, genuine hypertrophy and adenoid tumours, properly so called, instead of admitting two classes of tumours which are perfectly distinct, just as distinct as the fibrous tumours and polypi can be from hypertrophy of the uterus.

The question, however, is of little importance in practice, and I should not have discussed it here, except for the purpose of inducing those who held this opinion to decide it more clearly, in a scientific point of view; for I am quite ready to accept the assertion, if it be established on good grounds.

To maintain, *a priori*, as does M. Cruveilhier, and from microscopical evidence, as does M. Lebert, that from effused blood and lymph, &c., there can never result a really organized tumour, seems to me altogether incompatible with the results of truthful observation.

The microscope truly shows, that in innocent mammary tumours there are no cancer cells; that all such tumours are formed by homologous elements, by epithelial cells, or at most by the cells or fibres of fibro-plastic tissue; but the most practised microscopists are far from agreeing in their opinions. There is too much disagreement between the observations of M. Gluge, which were made under my own eyes, at Paris, in 1839, and those of M. Müller, on the one side, and between those of M. Vogel and M. Lebert on the other. The mode in which M. Donné and M. Mandl regard certain forms of globules, whether liquid or solid, is also too dissimilar, as will be seen in the chapter on cancers, to authorise pratitioners to accept doctrines hitherto derived from the microscope, as the essential basis in the determination of tumours of the breast.

It follows, then, from these details, that adenoid tumours of the breast, recognise, at least in a certain number of cases, the

"imperfect hypertrophy of the mammary gland," applied to these tumours seems to be ill chosen, for the word hypertrophy ought to be restricted, in pathology, to a change occurring in a natural organ, previously healthy, and I think few surgeons will deny that a "*chronic mammary tumour*," is often independent both of the breast and of the proper fibrous fascia of that organ, and therefore essentially a new production. If they are not tumours it is hard to say what growths can be entitled to that appellation.—Ed.]

[1] Vide *ante*, p. 184.

effusion of a morsel of plastic material, or of fibrine, as their primary cause; and when the formation of this first nucleus is once admitted, we may believe in the different shades that exist in the form and appearance of these tumours, although, possibly, all may have had a similar origin.

Supposing that some of them originate in a different manner, the fact remains, that they all present a great analogy in regard to their general characters, their symptoms, prognosis, and treatment. It was from this last consideration, and in order to avoid the difficulties resulting from the various opinions entertained respecting the primary nature of the disease, that I proposed the epithet adenoid, as preferable to any other. Under this denomination, I include fibrinous tumours, fibrous tumours, and a portion of the chronic mammary tumours of writers, all of which, in fact, have, at first sight, somewhat of a glandular aspect; but I exclude such tumours as are really hypertrophies. This name has thus the advantage of leaving untouched the question of their etiology, and does not expose us to any discussion as to the material structure of the tumour.

§ 4. DIAGNOSIS.—During the discussion raised at the Academy of Medicine, in 1844, by M. Cruveilhier, several practitioners maintained that the innocent could not by any means be distinguished from the malignant tumours of the breast. This is a mistake. Even if we admit for a moment that any tumour may become a cancer, that circumstance does not interfere with our ability to distinguish them, and does not authorise their being confounded together; for, after all, it is not to be denied, that, at any rate at certain periods of their growth, adenoid tumours do not markedly differ from cancerous growths, properly so called. There is nothing in a mammary tumour that can at first lead to its being referred to a cancer, or to encephaloid, or to colloid, or even to a cyst, or to a fatty growth, rather than to an adenoid tumour, and *vice versâ*. All these tumours, in fact, are often attributed by the patient to the same class of causes—to blows, bruises, or some other external violence. Many persons only discover them by accident, and cannot, in any way, assign a date to the disease under which they are labouring. The age, constitution, social condition, habits, and mode of living, are but feeble assistants in the conclusions to be drawn in such cases. If adenoid tumours more commonly arise, in unmarried or sterile women

than in others, these conditions do not at all exempt the same women from cancerous growth, or from cysts. The physical characters of the disease, in their turn, can, in many cases, do little else than give rise to great difficulties. An adenoid tumour, which is usually lobulated, elastic, hard, and indolent, does not in these respects differ so greatly from certain scirrhous, encephaloid, or colloid masses, or cysts, with thick walls, as to prevent the possibility of error. Still there are other characters which adenoid tumours, almost exclusively present, which, either in themselves, or from their association, prevent us in nearly all cases, from confounding this class of tumours with any other.

Thus, whether superficial or deep-seated, large or small, recent or of long standing, situated at the centre, or at the circumference of the mammary region, an adenoid tumour has a degree of mobility peculiar to itself. When compressed between two fingers on a somewhat solid base, as against the parietes of the chest, or a rib for instance, we readily ascertain that it undergoes displacement in any direction, like a fruit-stone or other foreign body, without dragging any of the lobes of the mammary gland with it. I never met with any other kind of tumour which had the same mobility.

Scirrhus is never isolated in the mamma; it is always continuous by some out-growth, or root, with the mammary tissue, and undergoes displacement by pressure, only as a mass or part of the gland itself. Scirrhus usually appears fixed to the skin, either by a few filaments, or still more intimately; whilst adenoid tumours throughout remain independent of that structure.

Encephaloid tumours lead to mistakes more readily; only it is rare that they do not attain a certain size in a few months; their development is so rapid, compared to that of adenoid tumours, and they so quickly assume a globular form, project in front, involve the skin, soften, and invade the neighbouring organs, that it is scarcely possible to confound them with adenoid tumours; and the skin, whilst getting thinner, always becomes attached to them in some points, which rarely occurs with adenoid tumours.

What has just been said, applies equally to colloid tumours. The fusion of tuberculous tumours with the mammary tissue, is too like scirrhus for me to dwell upon it here. Consequent on incomplete inflammatory action, or on exudation of tuberculous or purulent matters, these tuberculous tumours, as well as scirrhus, seem to involve a part of the mammary gland, which they drag

with them when pressed upon. Moreover, like encephaloid, the tuberculous growths in the breast pursue a course, and are subject to changes and softening, such as are never seen at the same period in adenoid tumours. With cancers, the constitution and the general health soon become impaired, and the neighbouring glands enlarged, but with adenoid, nothing of the kind is ever associated.

When innocent cysts have attained a certain size, and fluctuation is evident, no mistake is possible. As they are usually smooth on their external surface, it is not at first evident in what respect they can give the idea of an adenoid tumour; yet I have myself several times, and in two cases especially, committed a mistake of this kind.

Madame D—, of the Rue Bourtibourg, consulted me in 1843, for a tumour in the left breast of twelve years' standing. It was the size of a hen's egg, somewhat flattened, lobulated, elastic, indolent, and situated deep in the mammary tissue, some lines outside the nipple. I considered it an adenoid tumour, and the operation was commenced on this supposition, the error not being discovered until the sac, which contained about two table-spoonfuls of yellow serum, happened to be punctured by the knife.

The mistake, in this case, arose from two causes:

1st. That as the idea of its being a cyst did not occur to me in the first instance, the examination of the tumour was not made with sufficient care.

2d. That as the cyst was deeply situated, it was surrounded with thick, indurated walls, lobulated externally like an adenoid tumour. But it is unquestionable, that had I applied myself more attentively to the discovery of the fluctuation on the one hand, and to the mobility of the tumour on the other, such an error never could have arisen. I may add, that Madame D—, who remains well up to the present time (1853), has a voluminous breast, and is somewhat stout.

In the year 1847, I made a similar mistake at the hospital.

An unmarried female, æt. 32, came into the clinical hospital for a tumour which had existed in the left breast for many years, and which she attributed to a blow. The tumour, which did not exceed a chestnut in size, and was shaped like an almond, appeared to me lobular, moveable, and irregular, like an adenoid tumour, and the diagnosis seemed so clear that I confined myself to a very slight examination. Nevertheless the operation showed that the

ease was one of a small cyst, containing about a spoonful of coffee-coloured serum, with its walls, as in the preceding instance, dense and irregular.

No doubt such mistakes are not very important, since the necessary operation is not more difficult or serious on the second supposition than on the first; but they should certainly be attributed to inadvertence, consequent on an insufficient examination, rather than to the nature of the cases themselves.

When, in short, in a person who is still young, married or not; or even in a virgin, whatever be her age; or in a married woman who has never been pregnant; and in women who in other respects enjoy good health, or have only suffered from some uterine derangement, we find a tumour from the size of a hazel nut to that of a hen's egg, which is hard, elastic, somewhat irregular, usually indolent, and perfectly moveable, so as to be easily displaced in all directions, in the midst of the tissues, we may venture to assert that the case is one of adenoid tumour.

There can be scarcely any doubt whatever if we learn that the tumour dates back from a long period, and has been developed either subsequent to a blow or without evident cause; that it has grown slowly and without inflammation; that it has remained for a year or more without marked increase in size; and that it is not the seat of any throbbing or shooting pain. Our conviction will be complete, if to all these characters we can add that the tumour, although of old date, is not the seat of any fluctuation, and preserves its mobility without having contracted adhesion, either to the skin or subcutaneous structures, or to the mammary tissue, and that it is uncomplicated by any enlargement of the neighbouring lymphatic glands. There are some cases, doubtless, which are still open to doubt. Thus, some adenoid tumours are at first so small, and remain in that condition for so long a period, that we incur some risk of being mistaken if we attempt to form a positive diagnosis just at first. Others, which are occasionally the seat or source of pain, shootings, and tolerably acute darting sensations, may suggest the idea of a neuroma. At a more advanced period, adenoid tumours sometimes present such a considerable size, and such a marked, lobulated, and projecting appearance, that the skin covering them becomes thin, red, and marked by capillary veins, so that they assume the appearance of encephaloid tumours. It may happen, also, that cysts of variable dimensions may become developed in one or

more lobules of the tumour, so as to make a positive diagnosis almost impossible.

Notwithstanding all this however, we may, even in the most exceptional cases, with care and attention, distinguish between adenoid tumours, cysts properly so called, and cancers of the breast. The very small tumours which remain for a lengthened period, and are not usually the seat of acute pain, and are perfectly moveable, belong to the class of adenoid growths, and not to that of neuromata, which, without taking their characteristic pain into account, are always continuous with some of the layers or filaments of the healthy tissue; nor are they to be confounded with nodosities and mammary indurations, which are characterised by the circumstance that, in some measure, they form a portion of the lobes of the gland.

In the case of those tumours with cysts, and more or less softened lobules, we recognise them as of adenoid nature, by observing, that despite their long continuance, the general health has not suffered, that they preserve their mobility entire at the side of the gland, that the fluctuating projections are usually multiple, and that the whole structure still has, as its base, an elastic, solid, irregular mass under the skin.

The following is the account of one of the smallest that I have ever examined:

Case II.—*Adenoid tumour in the left breast; extirpation; cure.*[1]

Some adenoid tumours suggest, at the first, the idea of a smooth regular mass, and this depends on the circumstance that the surrounding tissues are, in some measure, moulded by their irregularities, and spread out so as to form a cyst for them. It is in these cases that the idea of fluctuation, which however has no real existence, may present itself; but if we carefully push the tumour against some fixed point of the parietes of the chest, and then examine it by means of attentive pressure in a perpendicular direction; if we roll it about, and grasp it in different points of its circumference or surface, we shall eventually come to the conclusion that it is not fluctuating, but in reality more or less lobulated; and even when, as in the preceding case, serum escapes from the nipple, it may be that it is solid and contains no cyst.

[1 The details have been omitted.—Ed.]

When it is added that, on dissection of these tumours after their removal from the breast, they are found to present characters wholly different from cancer; that they often have the homogeneous aspect of an hypertrophied lymphatic gland, or the granulated appearance of the liver; that, in some instances, they have the colour and density of mammary tissue; that their exterior, always more or less lumpy, and not simply wavy, as in scirrhus, is sometimes lobulated, almost laciniated like a cauliflower; that, at other times, they have the appearance of a fibrous body or of an organized concretion; if we consider that, microscopically examined, they merely exhibit homologous elements, such as globules, cells, and vesicles, analogous to the elements, globules, cells, and vesicles which enter into the composition, either of the gland itself, or of exudations from the vascular system, or from the tissues of the mammary region; if, in short, we reflect that these tumours do not in general contain either cells or cancerous nuclei, are we not forced to the conclusion that they form a class of tumours as different from cancers as from cysts?

Case III.—*Adenoid tumour of the left breast; escape of serum from the nipple; microscopical examination.*—Deldine, æt. 34, was admitted into St. Catherine's ward on the 20th of January, 1848. The patient was of sanguineous temperament, had always enjoyed good health, had menstruated regularly since the age of fourteen, and had given birth to three children, one of whom was still living; but she had never suckled. Three years ago the patient received a blow from the elbow on the left mamma. Eighteen months afterwards she discovered a tumour the size of a hazel nut in that situation, somewhat below, and on the outer side, which at first occasioned some pain. A practitioner directed friction with iodine ointment, but this treatment was discontinued at the end of six weeks, without having caused any diminution in the size of the tumour. Having been confined in the month of January the preceding year, the the patient noticed that a limpid, yellowish red serum escaped by the nipple, since which period the tumour had slowly increased in size.

At the present time it is as large as a hen's egg, firm, irregular, and somewhat lumpy; it is moveable, has no adhesion to the skin, which is unchanged in colour, and has a sort of

fibrous cord which extends towards the axilla. The nipple still discharges the fluid before mentioned.

January 23d.—The tumour was removed by means of a semicircular incision; and, in a short time, the patient recovered satisfactorily from the operation.

The following notes were made after the removal of the growth:

A hard tumour, as a subcutaneous mass, rolling under the skin, and not adherent, but connected with the mammary gland by a fine cellular pedicle.

On section it exhibits a tissue resembling that of an hypertrophied thyroid body, and has a glandular aspect. A thin slice, under a low magnifying power (30 diameters), shows very distinct glandular lobules, covered with granulations regularly dispersed over their surfaces.

Magnified 500 diameters, there were found only small globules, of a round form, without granules in their interior, and provided with a cell wall and a nucleus. The globules had a diameter of $0^{mm}{\cdot}02$, the nucleus only of $0^{mm}{\cdot}005$. These lobules seem to be such as we meet with in the healthy mammary gland.

The patient has been seen several times since, and has had no return of the disease.

§ 5. PROGNOSIS.—Many, perhaps most surgeons, still inquire, unless, in common with our forefathers, they consider the question as settled in the affirmative, whether the tumours thus described under the name of adenoides, are not simply cancers in their primary stage and first degree, benign scirrhus, or occult cancers in their stage of incubation. It is only necessary to enunciate this question in order to become sensible of its importance. Let us examine it in its principal aspects.

Clinical observation has been invoked on all sides. Those who believe in the possibility of transformation, maintain that they have often seen innocent tumours become malignant in the long run. M. Martin-Solon, seconded by Blandin, published, in 1844, the account of a tumour, in a woman, æt. 45, which had remained in a benign condition nearly twenty years, and then became transformed into encephaloid.[1]

Similar examples have been reported by others, especially by M. Roux.

To this first case two things may be objected: 1st, there is

[1 'Bulletin de l'Académie,' vol. ix, p. 330.—ED.]

nothing to show the innocent nature of the tumour in the first period of its history; 2d, neither is there any absolute proof that it was really encephaloid at the time of its removal. To say that women advanced in life, that those who are married or have borne children, are more subject to cancer than to innocent tumours, does not authorise the conclusion that innocent tumours become cancerous in this class of persons. Moreover, adenoid tumours have remained innocent, as my observations show, to the very last, in a vast number of married women, mothers of children. If it be true, that tumours which seemed to be innocent have taken on the characters of cancer, at a more advanced period of life, after the cessation of menstruation for instance, it does not by any means follow that they were primarily adenoid in nature. It may be that tumours cancerous in nature from the very first, do not display themselves, nor show their malignity, until after the lapse of a considerable time.

Those who argue in this way, have not taken account of the differences established by pathology between the various classes of tumours. Taking as their guide the results of treatment, they hold, like Boyer, that tumours which get well without operation, are innocent, and that those which resist local and general treatment other than purely surgical, are malignant.

To elucidate this question, it must be placed in another point of view. Are innocent and malignant tumours susceptible of changing their nature, and of becoming substituted the one for the other? or have they not, on the contrary, such a structure, that we must consider them as distinct species, from their commencement to their disappearance?

Why, it has been said, do not innocent tumours of the breast degenerate? The natural fibrous tissue, the periosteum, the dura mater, are they not frequently the subjects of transformation, and of genuine cancer? To this it may be answered, in the first place, that adenoid tumours are not composed of fibrous tissue; next, that cancers of the periosteum and dura mater are not by any means transformations or degenerations of fibrous tissue; here, as elsewhere, cancer is an heterologous production, and not a transformation, properly so called, of the healthy structures. Another argument, derived from observation at the bedside, is taken from the cancerous degeneration of certain polypi of the uterus, pointed out by Dupuytren and some other surgeons. Here again, in criticising these observations, and trying to arrive at the exact

nature of the facts, we are not long in discovering that the tumours spoken of have undergone putrescent or gangrenous decomposition, and not at all a cancerous transformation. Moreover, what proof is there, that the uterine tumours which became cancerous were primarily fibrous growths rather than genuine cancers? Even when cancers have been observed in tumours of this kind, it does not in any way follow, that the fibrous bodies, properly so called, are susceptible of degeneration; imbedded in the uterine tissue, they may, strictly speaking, become the seat of genuine cancer in their envelope, although remaining fibrous in the interior of the cyst which contains them. Moreover, is it not possible, that having established itself in the structure of the uterus, the cancer, in its development, overruns the fibrous tumour beneath? Who can, *a priori*, affirm that organized tumours, fibrous, adenoid, or others, are unlike the healthy tissues, altogether incapable of becoming the seat of an exudation, or accumulation of cancerous matter in their proper parenchyma?

Other tumours, capable of universal development, evidently form species, and entities that have their own proper origin, composition, development, form, life, and termination. No one dare maintain that pimples, or meliceric tumours may change into fat, any more than a fatty tumour can become a meliceris.

Steatomatous tumours on the scalp are of extreme frequency; but has any one ever seen them become transformed into a wart, a fibrous body, a sebaceous cyst, or a tubercular mass? No surgeon has pretended that meliceris, steatomatous, fatty, tuberculous tumours or warts, undergo cancerous degeneration frequently, or hesitates to affirm, that each one of these tumours preserves its own special nature at all periods of its evolution, from its commencement to its termination. Who, moreover, does not know that scirrhous, encephaloid, melanotic, and colloid tumours, have each their own special texture, composition, and characters? Who does not know, that when once one of these four tumours has been developed, however small it may be, its progress is, so to speak, as a cancer to a fatal termination; that, up to the present time, no one of them has ever cast off its malignant nature, to retrograde and assume the characters of an innocent growth? How, moreover, can we fail to be struck with that marked dissimilarity which, even according to the acknowledgment of those who hold the opposite opinion, causes the fact, that fibrous, fatty, and all other innocent tumours, undergo this transformation into cancer,

but very rarely, if, indeed, they ever do so; whilst a horrible transformation into ulceration is almost inevitable in scirrhus and encephaloid?

Still, it is true, that certain innocent tumours, like cancerous ones, may reappear in persons who have had them extirpated. In this respect, experience does not allow me, as it seems to allow some other practitioners, absolutely to deny the possibility of return, as a distinctive feature in adenoid tumours. I have already quoted the cases of women in whom they returned, after being effectually removed, at intervals of one, two, three, four, and even ten or twelve years; but a fundamental distinction should be made in these cases.

The return of tumours occurs, in practice, in two forms. Thus, a patient who has been operated on for a lipoma, is not, on that account, absolutely protected from fatty growths in any situation whatever. It is the same thing with steatomatous tumours on the head, the removal of one of these tumours from one parietal region does not, I presume, enable us to assert that a similar one may not show itself at a later period at the opposite parietal region, or elsewhere.

The same may be said of melicceris, and of almost all other homologous tumours. So that after having removed one adenoid tumour, one has no more right to assure the patient that she will never have any others, than to prognosticate of a patient who has been operated on for a lipoma, that she is for ever preserved from the occurrence of fatty tumours.

It is not in this sense that the return of cancerous tumours is to be understood. After extirpation, an adenoid tumour never springs up again, at least if a portion of it has not been left in the part in which it was situated in the first instance; it is often, however, just the contrary with cancerous tumours. It is rare to see the same patient affected several times with adenoid tumours; but, on the contrary, it is rare not to see genuine cancers reappear. When adenoid tumours do recur, it is generally after the lapse of a considerable period; the wound left by the operation always cicatrizes; as yet no one has ever seen it transformed into a malignant ulcer, or covered with cancerous vegetations, or form scirrhous cavities. After the removal of cancer, on the contrary, the return is usually rapid, and often does not give the wound time to close; instead of a wound, an ulcer with simple purulent discharge, in a great number of cases, we shortly have

a surface which is covered with granulations and encephaloid vegetations, which excavate the parts, and become the seat of an ichorous suppuration, the base of which, after a certain period, acquires the characters of scirrhous ulceration. Adenoid tumours never involve the neighbouring lymphatic glands, never spring up in the viscera or elsewhere than in the mamma, never destroy the organs bit by bit, never invade the tissues so as to disorganize them, never cease to be capable of removal with the chance of radical cure; but no one can deny that cancers do precisely the reverse.

The differences are thus as well marked in respect to return as in all other points of view, between adenoid tumours and cancers.

Although hitherto the cancerous degeneration of adenoid tumours has never been demonstrated, I cannot absolutely deny the possibility of its occurrence; some facts appear to me to call at least for reserve on the subject. If, as I believe, they are in some cases composed of homologous materials, either from rupture, vascular exudation, or derived from some of the excretory canals; if these tumours have occasionally, as their primary nucleus, a clot of fibrine, blood, or milk, or of some of those elements which the mammary gland has elaborated after they have been received into the circulation, it remains to be decided whether such products are not of a nature to undergo various changes.

As everything comes from the blood, the glands, whose function it is to elaborate new products, are more favorably situated than any other organ, to extract from it the elements of many diseases. We can thus understand that a nucleus, or particle of matter escaped from the glandular tissue, may give rise, in certain conditions, to a cancerous tumour. Being without the circulation, and in contact on all sides with organized lamellæ, these primitive materials may become the seat of a process which may, in some measure, develop them into new matters, into bodies which are parasitic, in the midst of the healthy tissues.

The whole question is to ascertain whether the materials furnished by the gland, or by the vessels, whether lymphatic, venous, or arterial, although homologous in their commencement, may not, under some organic or chemical action, assume the characters of certain heterologous products.

Certain facts, as before said, prevent our absolutely denying the possibility of this. In speaking of butyraceous tumours, I reported the case of a tumour, composed entirely of caseous ma-

terial, which, nevertheless, ended by undergoing the cancerous transformation. In another patient, who had two enormous adenoid tumours, the operation demonstrated that one of these tumours, the largest and oldest, although evidently adenoid, in two thirds of its mass, was transformed in its other third into softened lobules, which, in one part, it would have been difficult not to have confounded with a lump of encephaloid matter, in another, with a gelatiniform mass, and in a third, with tubercle or inspissated pus. In another patient, the tumour, under the microscope, was found to be cancerous in one half, and simply adenoid in the other. On the other hand, I have seen a tumour in a patient otherwise in good health, reproduce itself five times in the space of ten years, now on the right side, now on the left, but never at the same point. Now, although unmistakeably adenoid the first four times, the tumour left me in doubts at the fifth operation, for it resembled a somewhat hard encephaloid, or a mass of scirrhus.

Nothing of all this, I am aware, constitutes an incontrovertible proof in favour of the transformation from one species to another. We might have supposed, on section, in the first patient, that the encephaloid was joined to the butyrous or caseous element. It is possible, that in the second, the softened lobules of the tumour had a tendency to purulent or putrid decomposition, rather than to cancerous transformation; and in the third there is nothing to prove that the last tumour had been primarily adenoid, like the other four. It may even be said, that in these patients, the wounds from the operation had regularly closed and cicatrized, and that the general health had continued good under all circumstances. It is not the less true, however, that the analogy between such tumours and malignant growths is sufficiently striking to give rise to some suspicion, and justify at least serious doubts.

Whether adenoid tumours are made up of elements distinct from those of cancer, or whether they are capable of undergoing an encephaloid transformation, and of engendering cancer, it is, notwithstanding, true, that in the female mamma, they present their own proper progress, characters, evolution, and termination; that almost, if not quite constantly, from their commencement to their termination, they differ, in nearly all ways, from malignant tumours, and until more searching investigations shall have completely elucidated their intimate nature, we are bound, in my opinion, to accept, in practice, this great fact, which is derived

from experience, and the truth of which does not so far seem to me to be contestible.

In treating of their evolution, I have already said, that in some patients, adenoid tumours remain stationary for a series of years; having once reached a certain but not definite size, we find them ceasing to increase, and undergoing no appreciable change during one, seven, ten, fifteen, or even twenty years. In other cases, they increase in some measure by fits and starts. I have seen some that, having attained the size of a hazel nut, had remained in this condition for three or four years, when they forthwith doubled in size, in the space of a few months, then continued unchanged for several years, and finally doubled again in less than six months.

There are some, also, which, after having remained for a considerable period without change, commence to grow indefinitely. Nevertheless, the greater number continue to increase without manifest interruption, from the time they have first become apparent, until it has been determined to remove them.

The following are two remarkable examples of this class of tumours.

Case iv.—*Adenoid tumour, the size of a large fist, in a woman of 42; extirpation; cure.*—Mad. D—, thin, and somewhat delicate, consulted me, in 1851, for a tumour in the right breast, which had existed from seven to eight years, but had only increased alarmingly for a few months. It was the size of the fist, and the skin covering it was neither red nor adherent, but very thin, and almost everywhere appeared as if deprived of its cellular tissue. The bosses and lumps constituting its mass, had the appearance of an aggregation of truffles or potatoes knotted hard together. It was free in the midst of the tissues, and very moveable between the integuments and the chest. There was no hardened band or plate of skin in the neighbourhood, and no affection of the axillary glands. There was no appearance of its being softened or fluctuating; but in whichever situation it was examined, it remained elastic, solid, and without break in any part. Recognising it to be an adenoid or innocent tumour, I proposed its extirpation, promising that there would be no return, and a few days after performed the operation.

By means of a curved incision, I was enabled to detach enough integument to expose the whole tumour, and to extirpate it without removing the smallest portion of the surrounding tissues. Six

weeks afterwards the whole was healed, and the patient better in health than before the operation.

Pathological anatomy.—On dissection, as well as under the microscope, there was nothing that could lead to the belief of its being cancerous. No trace of a cancer cell, or of lacteseent or creamy juice, in its structure. It was throughout firm, elastic, organized, difficult to break down, resisting both tearing and the knife, like a fibrous tumour. Its different lobules were simply branches of each other, and quite free from the natural tissues of the part. The most attentive examination failed to discover any root, or prolongation of its proper tissue, which had to be divided in order to detach it from the healthy parts.

On every side it presented itself as a foreign body, which could be removed from the breast in which it had merely been developed without being associated with it, or having any material dependence upon it.

Case v.—*Adenoid tumour, the size of the head of a new-born child, in a woman of* 48 *years; extirpation; radical cure.*—Madame A—, who was under the care of M. Denis and M. Cruveilhier, had, for several years, suffered from a tumour in the right breast, the origin of which had not been noticed by the patient, and which, in fact, had occasional but trifling uneasiness. In 1844, as it had increased so as to occasion some alarm, various internal and external measures were resorted to, at the instance of different practitioners.

The development of the tumour was, however, in no ways checked; and, in a short time, the patient was recommended by every one to have the tumour removed. She was unwilling to submit to this, and remained for a long period under the care of M. Cruveilhier, with whom I saw her, in 1847. The tumour, at this time, occupied the whole right mammary region, and was as large as a medium-sized melon, somewhat flattened. Lobulated throughout, and angular, it had no adhesion to the skin, and was plainly moveable between the integuments and the chest. It was indolent, without any appearance of inflammation or fluctuation; and, although more supple, and softer in some situations than in others, it was, nevertheless, elastic and resistant throughout. The condition of the digestive organs was unsatisfactory; and Madame A—, without being emaciated, had, nevertheless, lost much of her embonpoint; but she had neither fever, cough, nor any symptom of organic disease.

My opinion was, that, in place of belonging to the category of cancerous tumours, and of encephaloid in particular, the tumour, contrary to the belief of most of the other practitioners, was adenoid; and as, moreover, there was no glandular enlargement either in the axilla or at the border of the pectoralis major, I had no hesitation in proposing an operation, which was agreed to, and carried into effect four days afterwards.

Having administered ether, a semi-lunar incision enabled me to dissect off a large flap so as to expose the whole tumour, and extirpate it entire. Thus was exposed a cavity, at the base and sides of which was the mammary tissue, squeezed up and atrophied, so that it was evident that new tissue alone had been removed, as if by enucleation. There was nothing worthy of note in the after history of the patient, who speedily recovered from the effects of the operation, and who, up to January, 1853, has had no appearance of a return of the disease.

Pathology of the tumour.—Under the microscope, the tumour exhibited the elements and cells of hypertrophied mammary, and fibrous tissue mixed with fat-cells. It gave rise to some difference of opinion, in a scientific society where it was exhibited. Some considered it cancerous, whilst others maintained that it was innocent. In my opinion it then presented, as it did also at the bedside of the patient, all the characters of an adenoid tumour; that is to say, it was elastic, solid, difficult to break down under the fingers, of a light yellowish grey colour, distinct, and easily separated from the cellular tissue and other structures surrounding it; made up of lobules, united together by layers, septa, or cellulo-fibrous bridles, which appeared to form a stroma for it. On section, it was dull white, rather yellowish blue, shining and looking as if it were grained.

On pressure it yielded no juice, and on scraping it with the scalpel, no fluid could be obtained. In the centre of two of its principal lobes, there were a few clots of yellowish softened matter, as if caseous or tuberculous; but everywhere else its tissue was firm, and presented a very definite organized look.

The spontaneous disappearance of these tumours, though rare, is yet not absolutely impossible. Two young ladies who suffered from them before their marriage, found that they had disappeared, the one after two, the other after three years, on the occasion of a second confinement. I have already related the history of a

lady whose breast was filled with them, and in whom, nevertheless, they disappeared without surgical interference. In this lady, who was sterile, although married at an early age, the adenoid tumours appeared in the first instance on one side, and subsequently on the other, when she was about twenty-five years old. At thirty, some of them were as large as a hen's egg, and others approached that of a walnut or chestnut. They were moveable against each other, and gave to each breast the aspect of a bunch of potatoes covered by integuments. All the treatment, and external and internal applications that could be thought of, had been employed without the slightest success. The uterus was the seat of lumps and tumours which had the same appearance. From the age of thirty to thirty-eight, Madame C— made use of no remedy whatever; and it was at the expiration of this last period, that is to say, when she was about forty years old, that they lessened in size, and became so flattened, that for some years past there has not been the least trace of them remaining in her breast.

When adenoid tumours have remained uncured, and the patients have reached the critical period of life, resolution occurs more frequently than at any other period; so that spontaneous cure no doubt would pretty frequently occur between the ages of forty-five and sixty, if it were allowable to leave them to themselves until that period of life.

In other cases it happens, that in place of being arrested in their progress, and becoming atrophied or resolved, or, at any rate, ceasing to grow, these tumours seem to redouble their activity at the approach of the period for the cessation of menstruation, and even subsequently.

This exacerbation, at such periods, sometimes brings about marked changes in their anatomical characters. The bosses in some of them change their appearance, soften, and become transformed, some into cysts containing either reddish or blackish serum, or a glairy matter like synovia; others, into soft fungous masses of a yellow or rosy colour, so as to give the idea of masses of encephaloid; others, again, into clots looking like cheese, tubercle, concrete pus, or colloid; all which changes, however, do not interfere with the other portions of the tumour maintaining their primitive characters. It is at this period, that inflammation may eventually arise in them, that pain and redness may occur, that the skin may proceed to ulcerate, that a purulent or putrilaginous formation may take place, and become

apparent to the practitioner, so that an adenoid tumour may give the idea of a vast ulcerated or softened cancer.

It may also happen that, increasing in size, the tumour may become softened, ulcerate the integuments, and escape in form like a fungus, or sanious polypus, as in the following cases, which are also remarkable in many other ways.

It is evident that with such a progress, adenoid tumours may terminate by compromising life and proving fatal.

Case VI.—*Enormous adenoid tumour, the integuments of which had sloughed, in a patient, æt. 46 years ; destruction by caustics ; apparent cure ; return of the disease ; extirpation at two operations ; radical cure.*—Madame T—, of Soissons, æt. 46, regular, having had three children, of nervous constitution, very impressionable, and extremely timid, came to Paris, in the year 1844, in order to be treated for a tumour which had existed in her breast for four years. It was as large as two fists, globular, slightly lobulated, indolent, and seemed to involve the whole mamma. Without being either red, or markedly thin, the skin covering it was adherent at some points; its consistence, elastic and as if fibrous almost throughout, was, nevertheless, diminished, and, as it were, fungous and softened over three or four of the bosses. It had arisen subsequent to a blow, as a small rolling body ; and, although flattened out against the chest, it preserved much mobility and sufficiently definite boundaries to enable it to be removed entire, whilst preserving, at the same time as much skin as was desirable. Every sort of medical application had been tried ineffectually ; and, as the patient would not hear of a cutting operation, and the application of ether had not yet been discovered, I was compelled to attempt its cure by caustics. I had recourse successively to potassa fusa, zinc paste, and to sulphuric acid with saffron. In three months the tumour was destroyed piecemeal, and Madame T— returned home, having still a suppurating wound of some extent, but with no trace of the tumour, except, perhaps, above and on the inner side, where there was a small elastic hard lump.

As the patient left contrary to my advice, since I did not consider her quite cured, it was long before I heard again of her, and I only knew very imperfectly what had taken place during several years. In the year 1847, she consulted me again, and I found her in a strange condition both as regarded her general

health and as regarded the tumour. Mde. T — had literally the appearance of a skeleton. Her extreme emaciation displayed all the osseous irregularities of her chest, as if the integuments alone were covering the bones ; and she was so feeble as scarcely to be able to leave her bed. The pulse was 85, and small but not feverish, and there was no fur on the tongue. This condition had been brought about by the return of the old tumour, which had attained a size and character that I have never met with in the same degree in any other patient. All the right half of the chest, from the axilla to the left side of the sternum, from the clavicle to the level of the diaphragm, was covered by an immense purulent fungus-looking tumour, of a light dirty greyish rose colour, in the form of a lobulated mass. The thickness of this sort of placenta-like structure was from an inch and one fifth to two inches and two fifths, both at the circumference and at the centre ; and being made up of large lobules, each from an inch and one fifth to an inch and three fifths in size, it was throughout irregular and granulated, like an immense cauliflower. In no part of the surface of this tumour was there the slightest trace of integument ; and it discharged a large amount of sanious or ichorous, rather than purulent fluid. The circumference of the tumour was simply applied against the chest, not adherent to it, and in this situation the skin was evidently retracted.

On raising it up, it became evident that it was continuous with the tissues of the chest by only half as much as one would have supposed from its external ulcerated surface. In short, it was nothing else but a large fungus, with a pedicle of about six inches in extent.

As the tissue of the tumour remained elastic and firm, so as not to be broken down on pressure, and did not often furnish a bloody discharge, I still thought the disease was not encephaloid ; but Mde. T— was in so deplorable a condition in other respects that, at the first moment, I refused to resort to any surgical measure. However, at the patient's earnest entreaty, and as it was plain that death would shortly ensue unless something were done, I consented to remove the tumour, having first of all expressed myself very dubiously about it. The tissues to be removed were but little vascular. But as it was important to avoid loss of blood, and I feared to make a large wound, I determined to divide the tumour in two, and at first to remove only the left half. There was no difficulty in the operation ; and without much

exceeding the limits of this morbid fungus, it was easy to leave a clean wound with a sound base instead of it. The patient supported the operation much better than I had expected; she suffered but little and had no syncope. Two little vessels were tied, dossils of lint and simple dressing sufficed to prevent any bleeding, and to absorb all the discharge from the neighbourhood. The next day Mde. T— was better and stronger, for she had lost one half of the copious suppuration and offensive smell which had so long depressed her; and, consequently, four days afterwards, I determined to complete the ablation of the tumour. There was no more difficulty in effecting this than there had been before, and there thus resulted a simple wound five or six inches in extent, and almost circular, occupying the whole extent of the mammary region. Far from being exhausted by this double operation, Mde. T— rapidly regained her health and strength, the wound cicatrized in less than a couple of months, and she has since remained perfectly well.

Pathological anatomy.—Microscopically examined, in the first instance by M. Follin, one of my pupils who assisted me in the operation, and afterwards by M. Lebert, who speaks of the case at page 20 of his 'Traité du Cancer,' the tumour appeared to be made up of various elements, amongst which there was especially a preponderance of fibro-plastic tissue. In no part of it was anything found that could suggest the idea of a cancer cell; under the microscope, as to the naked eye, it was made up of adenoid tissue, the most genuine and complete that could be imagined.

I never met with a patient in a more exhausted condition than was Madame T—, nor with an innocent tumour of larger size, and furnishing an equal amount of discharge day by day. Moreover, I should absolutely have declined to perform any operation, had I for an instant believed that the tumour was cancerous, or had I found in the neighbourhood of the axilla or elsewhere, the smallest tumour or doubtful swelling. This was, I have no hesitation in saying, the most conclusive case that I know, in favour of the distinction to be established amongst tumours of the breast, from their structural nature.[1]

[1 This and the succeeding case bear a strong resemblance to the sero-cystic tumours spoken of by Sir Benjamin Brodie. It will be noticed that M. Velpeau does not give any very detailed account of the growths so admirably described in Sir Benjamin's Lectures on Pathology and Surgery.—Ed.]

Case vii.—*Fungus-like tumour, shaped like a cauliflower, in the right breast of a patient, æt.* 65 *; extirpation; radical cure.*—A lady, of the neighbourhood of Pontoise, applied to me, in 1838, for a tumour, which had existed in her breast for ten years. Sixty-five years of age, generally enjoying good health, and having given birth to two children whom she did not nurse, this lady attributed her tumour to a blow from the elbow. Whilst the tumour remained small and indolent, she consulted no one ; but during the past three years only, the skin became ulcerated at one point, and following this, over the whole free surface of the gland. The discharge of an ichorous, grey, flesh coloured fluid, with a nauseous odour, followed this destruction of the integuments. The tumour was as large as a fist, and, from its granulated angular appearance, represented pretty exactly a large cauliflower.

The density and elasticity of the masses composing it, the small disposition that it showed to discharge blood under mechanical irritations and injuries, the absence of enlarged axillary glands, or of any other tumour in the neighbourhood, and the good condition of the patient's health, led me to believe, that the case was one of those tumours, which, at that time, I still denominated fibrous, and have subsequently described as fibrinous ; but which, at the present day, I now speak of as adenoid. I proposed extirpation to the patient, promising that there would be no return of the disease. The tumour, which was to a certain degree pedieulated, was easily removed, and left a wound of not more than an inch and three fifths in extent. It completely cicatrized in five weeks, and the patient remained well for ten years, when she died of acute pneumonia.

Pathological anatomy.—The examination of the tumour demonstrated a tissue apparently fibrous or granular, having a shining section, difficult to break down, and destitute of any lactescent juice, or creamy matter in its interstices. In one word, I was convinced of its innocent nature, and that there was nothing really cancerous in its texture. The assistance of the microscope was at that period unknown in the determination of the characters of morbid productions.

When left without treatment, adenoid tumours are compatible with the exercise of all the organic functions, and, in many patients, with perfect health, for years. They do not commonly become dangerous in the end, except from rare transformations.

Although they may disappear spontaneously, they do not the less, almost invariably, resist all efforts of the organism up to the close of life. If most commonly they are not the seat of a marked degree of pain, it cannot be denied that they are, on the other hand, an incessant cause of anxiety and torment; that, from their weight and volume, they give rise mechanically to deformity, and inconveniences which justify the solicitude of which they have at all times been the object, both to patients and to practitioners.

§ 6. TREATMENT.—All the questions relating to the treatment of tumours or the breast, or rather to that of tumours generally, come into view when we desire to speak of adenoid growths. Whether they belong to the first stage of cancer, or whether they are, as I believe, essentially of innocent nature, we have not the less to inquire, whether it be possible to relieve our patients from them by simple medical treatment; or whether surgical measures are alone available for their destruction. As, however, I shall be obliged to discuss this double question, when speaking of tumours which are really cancerous, I shall not dwell upon it here. Concluding that adenoid tumours are not cancerous, I shall investigate their treatment as amongst innocent growths.

With the prognosis that has been given of them, the question arises, whether they require to be submitted to any treatment at all? As they may, in the long run, disappear spontaneously, as they do not occasion any notable suffering, hardly produce any deformity when their volume is not considerable, and do not affect the general health, can they justify the slightest medical treatment? For myself, I do not hesitate to reply in the affirmative; whenever, at least, a tumour which has already attained a certain size, continues to increase, occasions uneasiness, becomes the seat of the slightest pain, or, in fact, whenever it disquiets or causes the patient much anxiety. Since their spontaneous disappearance is, after all, only a very exceptional event, upon which we can hardly calculate, and as it occurs in general only at an advanced period of life; and as, instead of disappearing, the tumour may attain a great size, or may degenerate, if not into a cancer, at least into an unhealthy mass, which repels every expectation of cure, I consider that it would be imprudent to discard all precautions, or not to resort to well understood treatment. This point being admitted, what are the methods to be employed in the management of adenoid tumours? It is sufficient to have

studied these tumours scalpel in hand, to have recognised their density and structure, and to have seen how they are interwoven and enclosed amidst the healthy tissues, in order to surmise that they are difficult to disperse; an induction which experience only too completely confirms. I have seen a large number of adenoid tumours in the breast; and, as has already been said, some have disappeared without treatment, or after all treatment has long ceased; but it would be difficult for me to cite one, excepting such as did not exceed the dimensions of a small chestnut, that had yielded to the measures directed against it.

The following cases show, that in some cases, at any rate, we may reckon on complete success:

Case VIII.—*Small adenoid tumour, in a young lady twenty-six years old; general treatment; topical remedies; cure.*—A young thin, delicate, nervous person, with disordered menstruation, whose digestion had long been painful, although she had a tolerable colour in the face, was sent me in the year 1847. She was tormented by a very small tumour, the size of a hazel nut, which had existed in the right breast for six months, without her being able to attribute it to any cause. As the general condition of the patient indicated slight chlorosis and gastralgia, and as the tumour, which was rolling, globular, and free in the midst of the mammary tissue, had occasioned but little pain, and did not show a tendency to rapid development, I did not recommend its extirpation. I prescribed ferruginous preparations internally, alkaline baths, bodily exercise; and, as topical applications, successively soap plaster and the ointments of the iodide of lead and mercury. By these measures, I much improved the general health, and caused the complete disappearance of the little tumour in the space of a year. I have since seen the patient, who has again fallen into her nervous chlorotic condition; but the tumour has not reappeared in the breast, although a little crack appeared in the furrow of the nipple, and remained for a long period, but eventually disappeared under the employment of white precipitate ointment.

Case IX.—*Adenoid tumour, the size of a nut, in a lady of twenty-five; cure, without operation.*[1]

Case X.—*Small adenoid tumour in a lady of thirty-six; cured without operation, and without regular treatment.*[2]

[1 The details have been omitted.—Ed.] [2 Ibid.]

There are larger tumours of this kind, whose progress has manifestly slackened, and which have ceased to increase, and have even become diminished under the influence of certain applications, or have ended by becoming stationary. The evolution of others has continued just as if no measures at all had been taken respecting them. Sometimes we succeed in ameliorating pain, and dissipating the uneasiness which the patients experience; but the tumour scarcely ever disappears, and the cure remains almost always incomplete. In this way we may calm the uneasiness of patients, we ease them more or less physically and morally, and that is in itself something; only, it is necessary that the surgeon should not deceive himself, and should be aware that, to obtain a radical cure with certainty, we do not as yet possess any means other than surgical operation.

Medical applications are here also numerous and varied. In fact, they are precisely the same as for hypertrophies and engorgements of the mamma, for chronic glandular induration, and for neuromata. If the case occur in a virgin, marriage may be recommended; if there be any menstrual derangement, or uterine disturbance, it must be attended to in the first instance. As a constitutional measure, the iodide of potassium may be continuously employed for some months, in quantities of fifteen or thirty grains a day; a saline purgative every week, and alkaline baths are to be employed at the same time. If there be no contra-indication, six or twelve leeches may be applied, below and on the outer side of the breast, every ten days or fortnight. The affected part may be rubbed every day with iodine or mercurial ointment, which may be followed by soap or hemlock plaster, or by the Empl. de Vigo; and even by blisters repeated every fortnight.

It is in such cases, that well-applied compression is occasionally useful, and may be tried without much inconvenience. If the tumour be voluminous, and wearying by its weight, it must be supported, and gently raised, by means of a light bandage, or of a well-made corset. Swans' down or hareskin, to cover the tumour, are also useful in maintaining an equable temperature. When there is pain, we must have recourse to topical sedatives. Camphorated, or opium liniments, or belladonna, or hyoscyamus are then indicated instead of ointments or plasters. It may be that simple emollient plasters, such as linseed, the pulp of carrot, &c., are preferable to liniments, ointments, or plasters.

Under all these measures, I repeat, it is possible that the

disease may become arrested. However, we must not allow appearances to deceive us, or be taken in by such a seeming improvement as pretty frequently occurs during the first period of treatment. For instance, it is not uncommon when we try compression, to find the tumour flatten somewhat, so as to suggest the idea of marked decrease in its volume; and as at the same time it becomes more moveable and better isolated, both patient and physician willingly believe that it is on the high road to complete resolution.

The mistake arises here from two causes:

1st. When pressed from before backwards, the tumour thins, and depresses the strata on which it rests, slides towards the soft parts, and empty spaces which exist beneath, and naturally tends to become lodged in the deepest or most dependent part of the corresponding intercostal space; so that, without having in reality lost any part of its volume, it appears to be less in size than it formerly was.

2d. The envelope of these tumours being softer and more vascular than the morbid product, and doubled on itself on the exterior of the strata of the parts, which are more or less thin, diminishes in size, spreads out or atrophies under the compression, up to a certain point, and in such a way, that being soon reduced in some sense to its proper elements, at the base of the mamma, the tumour suggests the notion that it has undergone decrease, although, in reality, it has not done so at all.

Under the influence of constitutional treatment, of the preparations of iodine and cod-liver oil especially, adenoid tumours sometimes sustain a diminution in size, respecting which, also, we must not be mistaken; I mean to say, that, under this treatment, some women undergo a marked general emaciation. It may then be, that the tumour diminishes in proportion to the rest of the body, *emaciates* in some sense like the rest of the organism, without, for all that, exhibiting any serious tendency to disappear. I have, moreover, even seen this diminution, respecting which, at first, one was so much inclined to rejoice, followed by a more rapid augmentation of the tumour than ever, whilst at the same time, the patient, no longer reduced by her medicines, regained her natural condition, and degree of stoutness.

If the remedies pointed out were incapable of giving rise to any inconvenience or indisposition, it would perhaps be allowable, in the greater number of cases, for us to content ourselves with

them; at any rate, we might try them without scruple. But, as it is not so, I come to the conclusion, that, as an absolute rule, it is better if we are free to do as we choose, to discard these remedies, rather than to recommend them; and in case the patient will not be content to retain her tumour, for us to proceed to the operation at once. In all cases, however, as it is hardly possible in practice to apply purely scientific laws to the treatment of disease; as many patients are especially nervous if they are not submitted to some kind of treatment, whilst they will not hear of an operation; and as the majority, at any rate, will not submit to an operation before they have tried everything else, it is allowable to give a trial to these different plans of treatment, which are, in fact, the most efficacious and the least offensive that we at present possess.

As for the operation itself, we must not here content ourselves either with caustics or the ligature, neither of which, in any respect, deserve to be preferred.

An operation with a cutting instrument is alone applicable; but as soon as we come to this subject, practitioners cease to be of one mind. Many maintain, absolutely, that innocent tumours of the breast should never be treated by the knife. In favour of this opinion, most lately put forward by M. Cruveilhier,[1] is adduced, on the one side, the harmless nature of the disease, and on the other, the gravity of the remedy.

Whilst the tumour remains innocent, says M. Moreau, leave it alone;[2] it is always time enough to extirpate it if it begin to degenerate, or undergo any kind of unhealthy transformation. We ought not to resort to the employment of a cutting instrument until all other known means have failed, and the disease is of a kind to compromise the life of the patient.

The doctrine here spoken of is widely spread amongst physicians, properly so called, and has been applied to other surgical diseases as well as to adenoid tumours of the breast. It seems, however, to have been adopted only from want of attention, and in consequence of insufficient reflection. According to this reasoning, there is no need to operate on fatty tumours, on meliceris, steatomata, &c., for those tumours are at least as innocent as adenoid growths; and, in themselves, we scarcely ever see them compromise the life of the patient. It is the same thing with

[1] 'Bulletin de l'Académie,' vol. ix, p. 330.

[2] Ibid., p. 367.

most deformities, with tumours, and with fistula lachrymalis; with tumours and with cysts on the eyelids; with hydroceles, and cysts in general.

The fact is, however, that it does not require a disease to threaten life, for us to be called upon to free a patient from it. An operation is even more commonly demanded, because it occasions uneasiness, disturbs some of the natural functions, produces deformity, or is the occasion of anxiety to the patient. The truth of what is here stated is so evident, that it would be insulting to dwell further upon it. But, says some one, if the operation were never dangerous, perhaps it would be allowable to have recourse to it as readily as to medicinal measures. Here, again, it seems to me the question has not been placed in a right point of view. To say, as has often been done, that it is a hundredfold better to learn to cure surgical diseases without operation, than to invent the most brilliant operations, seems to me absolute nonsense. In the case of a tumour, or of any surgical affection, the question never is, whether it is *possible* to obtain a cure without operation, but to decide which course is at the same time the most useful, the most sure, and the least dangerous. Now, is it not clear as daylight, that certain surgical operations present at the same time less danger, and more security than any other measure, for the cure of a number of diseases, which, nevertheless, it is possible to get rid of by internal or constitutional treatment and topical application?

It would seem, to listen to the despisers of surgery, as if purely medical and topical treatment were never exposed to the slightest inconvenience or risk. It is as if, for example, a patient whom we may consider it necessary to purge once or twice a week, has positively nothing to fear on account of his stomach or bowels. Do not those who take iodide of potash, and preparations of mercury, hemlock, tannin, camphor, or the salts of iron, run some risk of having their general health impaired? Those who are weakened by repeated local or general bleeding, or by a vegetable diet, have they, also, nothing to dread from such treatment? If to these are added the irritations, inflammations, eruptions, and erysipelas, which the employment of all varieties of topical measures may induce have we not already a mass of inconveniences enough to counterpoise those of a surgical operation? Then, are we to consider as nothing the distress, the incessant anxiety of the patients and their families, who, not

finding the tumour to diminish, or even perceiving it to increase, have perpetually before their eyes the fear of cancerous degeneration which never leaves them, until the moment that the tumour is no longer in existence, and who, without operation, must suffer these cruel terrors for years?

On the other side, is it true, that the operation for the removal of adenoid tumours is really serious? I shall not seek to deny that any surgical operation, like any wound, however small it may be, does sometimes lead to serious accidents, or, in fact, open a door to death. But it is the same thing with everything that affects the human body. The prick of a pin or needle, the bite of a leech, phlebotomy, cupping, tooth-drawing, a blister, the cautery, a seton, a sinapism, any kind of plaster, a simple foot-bath, have all of them, more than once, led to fatal illness, but the practitioner does not on that account feel obliged to conclude that the wounds in question are serious, or that the measures in question should be discarded from therapeutics. In itself, the extirpation of adenoid tumours is almost always reduced to a simple wound. It is neither tedious nor difficult, and is rarely followed by untoward consequences. Enveloped in healthy tissue of which they remain almost completely independent, these tumours may be enucleated like foreign bodies. It is useless in any case to remove along with them a large portion of the surrounding tissues. When it is impossible to obtain union of the wound by the first intention, we may at least dress it like an ordinary wound in the mamma. Having to dread neither the reproduction of the tumour, in the neighbourhood, or at a distance, nor granulation of an unhealthy character from the wound, there is no necessity for a severe regimen, or for active internal or external treatment as a complement to the operation.

The general health is usually so little affected, that the operation is not followed either by fever or by loss of appetite, and the patients can get up without inconvenience at the end of a few days. The following affords an example of this favorable result.

Case xi.—*Adenoid tumour of the right mamma; extirpation; simple dressing at first, and subsequently with diluted onguent de la mère; cure.*[1]

[1 The details have been omitted.—Ed.]

No doubt after these, as after any other operation, erysipelas may supervene, just as it may in consequence of irritation of the skin, or of any kind of suppuration. It is also possible that inflammation or suppuration may extend from the depths of the wound to the submammary structure, or to the intermediate tissues, so as to bring on diffuse or circumscribed inflammation, or purulent infiltration, or a larger or smaller abscess in other situations. The gravitation of the pus may call for one or more counter-openings or secondary incisions; but, besides that such accidents are rare, and such consequences of the operation quite exceptional, it is incontestible that the smallest wounds are equally liable to them, without patients or surgeons being frightened by the possibility of their occurrence. I may, at least, affirm, that the removal of adenoid tumours, in my experience, has seldom been followed by any real danger; and I do not even know whether I could quote more than one case of death occasioned by the operation.

Out of more than fifty patients on whom I have operated, ten had erysipelas, two hospital gangrene, two abscess, one cholera, and one hemorrhage, but not one of them died.

If many physicians and some surgeons consider this operation as serious, it is evidently because they confound together two things which should be carefully separated; that is to say, the operation necessary in cases of malignant tumour with that applicable to innocent ones.

In short, with a little attention, it is easy to see that the dangers and misfortunes spoken of belong to cancerous and not to adenoid tumours. The removal of the whole mamma, the necessarily extensive, tedious, laborious, and painful dissection, the interference with the cavity of the axilla, and the vast suppuration which so often proves fatal, do not in any way concern the extirpation of adenoid growths; and I am persuaded that, as regards prognosis, the proceeding ceases to appear dangerous, and may be placed in the list of simple operations, from the moment that we separate it from the operations practised for the removal of cancer.

Although it is my belief that these tumours remain innocent to the last, and are not susceptible of malignant or cancerous transformation, I am not the less of opinion, that it is more advisable to extirpate than either to treat them by simple topical or constitutional remedies, or to leave them entirely alone. The course I pursue, and have for long past recommended, is as follows:

1st. If the patient be comfortable in herself, little disposed to torment herself, and have a tumour of long standing, or one that is stationary, I advise that she should pay no attention to it, should not adopt any treatment, or examine it, except at long intervals.

2d. To those who are naturally uneasy, I strive to prove, that in itself the tumour is unattended with danger, and is incapable of assuming a malignant character; and I prescribe for them some of the applications spoken of above; more with the object of quieting their imaginations, than with the hope of curing the disease.

3d. I persevere with these remedies, when the case occurs in a timid woman who has an extreme dread of anything resembling an operation.

4th. When the patient renders herself too anxious about her tumour, and the dangers she attributes to it are more frightful to her than a surgical operation, I recommend her to submit to the employment of the knife.

5th. In short, I tell those patients, that there is no danger in retaining their tumour, but that if they desire to have it cured, medical applications afford but a small chance, and require a long persistence in their use, whilst an operation will rid them certainly of the tumour, without exposing them to any great risk; and I add, that when once extirpated, the disease will not return.

If, then, this course of proceeding be in accordance with the dictates of prudence, at that stage of the disease in which there may still be some question as to the ultimate malignity of these tumours, it would evidently be imperative on us, if we entertained the opinion that these are only cancerous tumours in their earliest stage, that they are, in fact, occult cancers. It is certain that, on the last supposition, the operation would not be merely permissible but obligatory on every honest practitioner.

No one can deny that many persons have remained radically well after the removal of an adenoid tumour. If, then, these tumours be destined one day or other to undergo the cancerous transformation, it is evident that these persons have been preserved from or cured of cancer. As, on the other hand, the removal of tumours that are manifestly cancerous, is at once dangerous in itself, and rarely followed by ultimate cure, we are naturally led to the conclusion that it is prudent if not indispensable, to extirpate even innocent mammary tumours, rather than

to subject them to treatment by uncertain medical applications. When once destroyed, adenoid tumours, have, as already observed, reappeared either in the same or in the opposite mamma.

The following is an instance, remarkable in more than one respect.

Case xii.—*Adenoid tumour as large as the two fists, in a young lady twenty years old; small tumour at some distance from the other; extirpation; cure; appearance at the expiration of eighteen months of a tumour of the same kind, and of the size of an egg in the opposite breast; new operation; radical cure.*—Mademoiselle A. D—, a young lady of nervo-lymphatic constitution, regular, in good health, and with a large bust, was brought to me by her mother, in the year 1843. In the left breast was a tumour as large as the two fists of at least three years' duration, which had never occasioned pain, and only distressed the patient from the deformity that it occasioned. It was fibrous in consistence, very elastic, slightly lobulated, and projected more particularly above and on the outer side of the nipple, in such a way that the breast, in the substance of which it appeared to have grown, was elevated, and, as it were, displaced above and on the inner side. It was moveable and perfectly free in the midst of the healthy tissues, of which it was quite independent; and there was no trace of fluctuation in any part. There was no alteration in the structure of the axilla, and no appearance of disease in the chest or abdomen. As I here recognised all the symptoms of an adenoid tumour, I recommended an operation which was performed a few days afterwards. Desiring to preserve the natural form of the breast, I made a curved incision, the convexity of which was below and on the outer side, and raised a large flap of integument, of subcutaneous structure, and of a thickish layer of mammary tissue, in the midst of which was the tumour, which could thus be extracted by enucleation, rather than by dissection, as it had no real connection in any part with the glandular tissue. When it had been removed, I discovered by examination with the finger a second tumour, situated more deeply above and within in the substance of the mammary tissue, close to the parietes of the chest, equally moveable, smooth and regular, the size of a large almond, and as if encysted at some distance from the wound. The parts over

it being divided, it was seized by means of a hook, and extracted as in the former case, thus convincing me that it was not adherent by any pedicle to the bed in which it lay.

The wounds healed rapidly, and at the end of six months the patient had recovered.

Morbid anatomy—The tumour was composed of solid, elastic, whitish tissue, equally difficult to tear and to crush, and destitute of any cancer-cells or juice. Both in its lobules, its centre, and its periphery, it was completely independent, and easily isolated, without dissection, both from the mammary structure and from the fibro-cellular tissue of the part. The smaller tumour was precisely like the larger one, both in structure and in external characters.

As I stated that there would be no return of the disease, the parents of the young lady were much surprised and distressed, the next year, to perceive that a new tumour had made its appearance. At the end of eighteen months the patient came to me again, and I found in the right breast a swelling precisely resembling, except in size, that which had been removed from the left mamma in the former year. This second tumour had been developed, like the first—insensibly, without suffering, alteration in the general health, or appreciable cause. It was rolling and moveable amidst the tissues, somewhat deeply situated, and independent of the skin and parietes of the chest. It was regular, very slightly lobulated, very elastic, and the size of a hen's egg. All these characters, far from shaking my former opinion, only confirmed it. It did not lie in the same breast as the other. Being deeply situated, it had, perhaps, escaped my former examinations, although it probably was in existence at the time when they were made. The operation was performed a few days afterwards, and the tumomr found to be contained in a sort of cyst, from which it could be extracted by enucleation.

There was no other tumour in the breast; and both to the naked eye and to the microscope, this tumour presented exactly the same characters as the former one.

Since then the patient has married, and has had no further anxiety about her breasts.

Such cases at once lead to the inquiry whether it would not be right to recommend patients to adopt certain precautions and preventive measures. It seems certain that marriage and preg-

nancy are more often useful than the reverse; the menstruation and the uterine functions generally, must be attended to. But, besides these purely hygienic precautions, we have no sort of positive knowledge as to what will prevent the formation of an adenoid tumour; but, at the same time, it must be added, that their reappearance even after a long interval, is so rare and exceptional, as hardly to justify any precautions which may be distressing, and that it is better, as in the preceding and as in the following case, to have recourse to a new operation.

Case xiii.—*Adenoid tumour of the right breast, in a woman who had been operated on twelve years before, for a similar tumour on the left side.*[1]

In order not to prolong this chapter unreasonably, I shall now give a very concise abridgement of those cases of adenoid tumours, which were not referred to above, and which will be found in part referred to again, with the greater number of the others, in the general table.[2]

[1 The details have been omitted.—Ed.]

[2 M. Velpeau here supplies a short resumé of thirty-two other cases of adenoid tumours of the breast, in which he successfully performed an operation; and of one other, in which no operation was adopted. The details are such as are usual in these cases; but it may be mentioned, that in several of these, it is stated that the tumour was entirely unconnected with the mammary gland.—Ed.]

ADENOID

Date.	Age.	Occupation.	Seat.	Date of Appearance.	Cause.	Treatment.	Complication after Treatment.
1836	39	Labouring woman.	Right breast	—	—	Compression.	—
„	37	—	„ „	7 years.	—	Extirpation.	—
„	85	—	Left breast	15 „	—	Ligature.	—
1837	55	Laundress.	Right breast	10 „	Blow.	Extirpation.	—
„	22	Sempstress.	Left breast	10 months.	„	„	—
1838	48	Laundress.	Right breast	6 „	—	„	—
„	48	Labouring woman.	„ „	15 years.	—	„	Erysipelas.
„	65	—	„ „	10 „	Blow.	„	—
1839	40	Fruit-merchant.	Left breast	5 months.	„	„	Erysipelas.
1840	28	—	Right breast	5 or 6 years	—	„	Abscess; erysipelas.
„	27	Sempstress.	„ „	18 months.	Several blows.	„	—
„	20	Labouring woman.	„ „	3 years.	Blow.	„	—
1841	24	A huckster.	Left breast	Some months.	„	„	Erysipelas.
1842	32	Lace-maker.	Right breast	8 years.	„	„	„
„	34	Shawl-woman.	Left breast	18 months.	„	„	—
„	36	Sempstress.	„ „	12 years.	—	„	—
1843	20	—	„ „	3 „	—	„	—
1844	24	—	„ „	6 „	Blow.	„	—
„	46	—	—	4 „	—	Caustics.	Apparent cure; return; extirpation at two operations.

TUMOURS.

Duration.		Termination.	Pathological Anatomy.	Confinements.	Observations.
Complete.	Since the Treatment.				
33 days.	45 days.	Remained in same condition.	——	Several children.	——
3 weeks.		Cured.	The texture of an adenoid tumour.	—	Operated on for a similar tumour in the left breast twelve months before.
,, ,,		,,	——	—	Died four years after, without any trace of return of disease.
53 days.	45 days.	Nearly cured.	Section deep grey, shining, destitute of juice.	—	——
33 ,,	25 ,,	Cured.	Completely separated from the mammary structures; tissue greyish, homogeneous, elastic, destitute of juice.	—	——
38 ,,	32 ,,	,,	,, ,,	2 children	——
39 ,,	30 ,,	Went out before the wound had completely healed	,, ,,	1 child.	The tumours were two or three in number.
5 weeks.		Cured.	,, ,,	2 children	Died ten years later without return.
39 days.	34 days.	Went out before wound had completely healed.	——	1 child.	The size of an egg.
53 ,,	50 ,,	,,	Texture of an adenoid tumour.	,,	,, ,,
16 ,,	13 ,,	,,	,, ,,	2 children	The size of a large chestnut.
36 ,,	29 ,,	Cured.	,, ,,	1 child.	The size of a pigeon's egg.
35 ,,	31 ,,	,,	,, ,,	—	The size of an egg.
29 ,,	23 ,,	,,	No account preserved.	—	,, ,,
21 ,,	16 ,,	,,	Texture of an adenoid tumour.	3 children	,, ,,
—	43 ,,	,,	——	—	——
—	—	,,	Texture of an adenoid tumour.	—	Eighteen months, another adenoid tumour in right breast; extirpation; radical cure.
41 days.	32 days.	,,	,, ,,	2 children	The size of the fist.
—	1 month.	Radical cure.	——	3 ,,	Texture of an adenoid tumour; no cancer-cells (Lebert & Follin.)

Date.	Age.	Occupation	Seat.	Date of Appearance.	Cause.	Treatment.	Complication after Treatment.
1845	23	—	—	Several years.	—	Extirpation.	—
„	36	—	Left breast	3 years.	Blow.	External and internal resolvent treatment.	—
1846	45	—	Both breasts	4 months.	—	Extirpation.	—
1847	27	A winder.	„ „	—	—	„	—
„	26	—	Right breast	6 months.	—	Had resisted general and topical treatment.	—
„	41	Shopwoman.	„ „	7 or 8 months.	—	Extirpation.	—
„	48	—	„ „	Several years.	—	—	—
„	25	Wife of a goldsmith.	„ „	„	Blow.	„	Returned in the same place.
„	25	—	Left breast	4 or 5 years.	—	Iodide of potash, alkaline baths: plasters.	—
1848	34	Sempstress.	„ „	—	Blow.	Extirpation.	—
„	56	Labouring woman.	„ „	—	—	„	—
„	37	Sempstress.	—	—	Fall.	„	Cholera.
1849	25	—	Left breast	4 or 5 years.	—	Resolvent remedies.	—
1850	48	—	„ „	5 years.	—	Extirpation.	Erysipelas; abscess.
„	35	Cook.	Right breast	15 months.	—	„	Erysipelas.
„	26	Sempstress.	„ „	4 years.	Contusion.	„	Erysipelas; abscess.
„	48	Lace-maker.	Left breast	1 month.	—	„	—
„	30	Shopwoman.	„ „	2 years.	—	„	—
„	43	—	„ „	2 „	—	—	—
1851	29	Sempstress.	„ „	—	—	Extirpation.	—
„	49	Nun.	Right breast	18 months.	Blow.	„	Hospital gangrene.
„	47	Housemaid.	—	—	—	„	Erysipelas.

Duration.		Termination.	Pathological Anatomy.	Confinements.	Observations.
Complete.	Since the Treatment.				
—	1 month.	Cured.	Under the microscope, an adenoid tumour enclosing the cells of encephaloid cancer.	2 children	No trace of return.
—	—	,,	——	—	No operation.
—	6 weeks.	,,	Under the microscope, an adenoid tumour, with bosses of encephaloid, colloid, and even tubercular matter.	—	——
40 days.	33 days.	,,	Texture of an adenoid tumour.	—	——
—	1 year.	,,	——	—	——
32 days.	28 days.	Went out before the wound had healed.	——	—	The size of an egg.
—	2 months.	Cured.	Texture of adenoid tumours. Under the microscope, mammary hypertrophy.	2 children	The dimensions of a medium-sized melon
—	—	,,	——	1 child	——
—	—	,,	——	2 children	No operation.
—	20 days.	—	——	—	——
—	2 months.	Cured.	——	—	——
—	1 month.	,,	——	—	Return after three years.
—	1 year.	,,	——	2 children	The size of an egg.
28 days.	25 days.	,,	——	—	The size of the head of a fœtus.
34 ,,	30 ,,	,,	Under microscope, no cancer-cells.	—	There were two tumours.
54 ,,	48 ,,	,,	Under microscope, mammary hypertrophy.	1 child	Cyst opened during the operation.
53 ,,	42 ,,	,,	——	—	The size and form of a walnut.
20 ,,	15 ,,	Nearly well.	——	3 children	The size of a nut.
25 ,,	20 ,,	,,	——	1 child	——
67 ,,	63 ,,	Cured.	To unassisted vision and under microscope, mammary hypertrophy.	—	The size of the fist.
26 ,,	24 ,,	,,	Under microscope, mammary hypertrophy.	—	Encysted tumour.

Date.	Age.	Occupation.	Seat.	Date of Appearance.	Cause.	Treatment.	Complication after Treatment.
1851	53	Labouring woman.	Left breast	—	—	Extirpation.	Hospital gangrene.
,,	42	—	Right breast	7 or 8 years.	—	,,	Abscess (incision).
,,	48	Proprietor.	Left breast	—	—	,,	—
1852	23	Laundress.	Right breast	5 months.	Contusion.	,,	—
,,	—	,,	,, ,,	8 years.	,,	,,	Erysipelas.
,,	38	Sempstress.	,, ,,	2 ,,	Blow.	,,	Hemorrhage
,,	17	,,	,, ,,	11 months.	Fall.	,,	—
,,	19	,,	,, ,,	11 years.	Blow.	,,	—
,,	52	—	Left breast	24 ,,	—	,,	Flying erysipelas.
,,	46	Fringe-maker.	Right breast	—	—	,,	—
,,	36	Shopwoman.	Left breast	10 years.	—	,,	Hemorrhage
1853	48	Laundress.	,, ,,	15 ,,	Blow.	,,	—
,,	60	Sempstress.	,, ,,	20 ,,	—	,,	—
,,	28	Farmer's wife.	,, ,,	3 ,,	Blow.	,,	—

ADENOID TUMOURS

Date.	Age.	Occupation.	Seat.	Date of Appearance.	Complications.
1836	39	Labouring woman.	Right breast.	—	—
,,	85	——	Left breast.	15 years.	Ulcerated for three years.
1845	36	——	,, ,,	3 ,,	—
1847	26	——	Right breast.	6 months.	—
1849	25	——	Left breast.	4 or 5 years.	—
1850	43	——	,, ,,	2 years.	—

CAUSTICS.

1840	46	——	—	4 years.	—

Duration.		Termination.	Pathological Anatomy.	Confinements.	Observations.
Complete.	Since the Treatment.				
66 days.	—	Cured.	——	—	——
—	6 weeks.	,,	Texture of an adenoid tumour; no cancer-cells.	—	The size of the fist.
32 days.	—	,,	——	—	——
25 ,,	22 days.	,,	Texture of an adenoid tumour. Under microscope, mammary hypertrophy.	—	——
—	30 ,,	,,	——	—	Sanguineous depot in the tumour.
23 days.	16 ,,	,,	Texture of an adenoid tumour. Under microscope, mammary hypertrophy.	—	——
45 ,,	28 ,,	,,	——	—	——
14 ,,	7 ,,	Went out before the wound had quite healed.	Texture of an adenoid tumour. Under microscope, mammary hypertrophy.	—	The patient was afterwards seen quite well.
45 ,,	41 ,,	Cured.	,, ,,	—	——
—	46 ,,	,,	——	—	——
—	32 ,,	,,	——	—	——
—	30 ,,	,,	Lobulated.	2 children	The size of the head
—	40 ,,	,,	,,	Virgin.	The size of the fist.
—	27 ,,	,,	Homogeneous.	No children.	Keloides in the cicatrix.

NOT OPERATED ON.

Treatment.	Duration.	Termination.	Observations.
Compression.	—	Same condition.	Case incomplete.
Ligature.	3 weeks.	Cured.	Died four years after, without return.
Resolvent treatment externally and internally.	—	,,	Irregular treatment.
General and topical resolvent treatment.	1 year.	,,	No return.
Iodide of potash; alkaline baths; plasters.	—	,,	Treatment carried out in every respect.
,, ,,	18 months.	,,	,, ,,
Caustics.	—	Cured.	Cured, but return, and extirpation; radical cure.

This table, as will be observed, with a few exceptions, relates only to cases treated in the hospital. It did not seem to me advisable to add those that I saw in private, for I could not exactly state the number, having lost sight of nearly all those upon whom I did not operate.

Some recent cases, added to the preceding, have furnished me with a total of 60 collected in the following years:

1836	3 cases.
1837	2 „
1838	3 „
1839	1 „
1840	3 „
1841	1 „
1842	3 „
1843	1 „
1844	2 „
1845	2 „
1846	1 „
1847	6 „
1848	3 „
1849	1 „
1850	6 „
1851	6 „
1852	8 „
1853	8 „

The results of the operations were complicated—

With erysipelas	ten times.
„ hospital gangrene	twice.
„ abscess	twice.
„ hemorrhage	once.
„ cholera	once.

Not one of the patients died, all eventually recovered.

If I could enumerate all the other cases that I have seen, both before 1836, and subsequently, in my private practice as well as in the hospital, I could certainly have added more than half as many more.

SECTION II.

DISEASES OF MALIGNANT NATURE, OR CANCERS OF THE MAMMARY REGION.

Cancer of the breast differs neither in its nature nor in its form from cancer of other parts of the body. I have not, however, to treat of cancer generally; but as cancer of the mamma is the most frequent variety, and as it serves as the type of the disease in all discussions about cancerous affections, I shall be obliged to enter into numerous details relative to the pathology of cancer generally.

CHAPTER I.

VARIOUS FORMS OF CANCER.

Even should pathological anatomy succeed in demonstrating that cancer is always and in every situation the same disease in its essence, it would still remain evident that it occurs to us in various forms.

In the breast, it shows itself in three principal varieties: as scirrhus, encephaloid, and fibro-plastic cancer, which seem occasionally to be associated together, but which usually from the commencement to the termination, preserve very dissimilar clinical characters. Melanosis, keloides, and epithelial cancer, are very rare in this situation. After carefully considering the disease as it occurs in women, I shall say a few words respecting it in men, and afterwards in children.

I.—SCIRRHUS.

In the mamma as elsewhere, scirrhus presents itself in different aspects. Thus we here meet with scirrhus properly so called; that is, with ligneous scirrhus having branches and roots, with lardaceous scirrhus, with diffused scirrhus, and with scirrhus in the form of plates. Though these varieties may all be united in the same mamma, they are also met with separately in other patients.

According to many foreign observers, Abernethy and Scarpa amongst others, scirrhus alone is cancer.[1]

§ 1. LIGNEOUS SCIRRHUS.—By this term I designate a class of tumours which present, as their principal characteristics, hardness, the inextensibility of wood, and no fixed limits, so that they are continuous with the neighbouring tissues, without appreciable line of demarcation. I have met with them in four principal varieties: as semi-globular masses more or less voluminous in the substance of the tissues constituting *scirrhus properly so called;* as *plates* or *layers,* that is, as *tegumentary scirrhus;* as *tubercles* or *nodules,* that is, as *diffused* or *tubercular scirrhus;* and in the form of dry, retracted ulceration, that is, as *atrophic scirrhus.*

A. *Scirrhus properly so called, or Globular Scirrhus.*—This species of cancer is characterised by a sort of roughened, irregular, and slightly lobulated tumour, which, instead of *rolling under the skin* as is generally believed, and as it is even yet described by A. Bérard, suggests the idea of an indurated portion of the mammary gland, and not of an independent mass capable of being moved about amidst the natural tissues, with which, on the contrary, it is manifestly everywhere continuous. The tumour is very hard, especially at the centre, and loses its consistence in proportion as the part examined is further removed from the principal focus. It seems as if there was a focus from which either the fibro-cellular web or the adjacent lobules of the breast radiate as lamellæ or roots. In its first stage scirrhus is moveable with the glandular tissue between the chest and the integuments, but it soon extends in depth and contracts adhesions with the ribs or intercostal muscles: before reaching them, however, it almost always involves the skin, which it seems to drag in to itself, and from which it soon cannot be separated or even distinguished.

It is rare for scirrhus to continue beyond a few months, and to attain a certain size, without the integuments covering it becoming wrinkled or depressed, and assuming a gray tint, or taking on the

[1] A. Bérard, 'Dict. de Méd.,' vol. vi, p. 291. [Mr. Abernethy was well acquainted with the fungus hæmatodes of Hey, and himself speaks of the pulpy or medullary scarcoma, which he describes as of "a whitish colour, resembling, in a general and distant inspection, the appearance of the brain." (Works, vol. ii, p. 57.) Mr. Abernethy, however, assumed scirrhus as the type of cancer, describing it under the name of "Carcinomatous Scarcoma;" observing, notwithstanding, that it "is not, in every instance, so peculiarly hard as to entitle it to the name scirrhus." (Op. cit., p. 69.)—ED.]

speckled aspect of the honey-combed portions of the intestine. This last character is so pathognomonic that, when in association with adhesion of the skin, over an indurated mass in the breast, it alone is sufficient to enable us to feel sure that the case is one of scirrhus, and from simply looking upon it, an experienced surgeon may boldly diagnose the disease in question to be a cancer.

Globular scirrhus scarcely ever presents large bosses, and it is also rare for it to reach a large size. Usually it attains the size of a hen's egg or a nut: beyond these dimensions it enlarges and sends out expansions like roots in different directions, or it undergoes ulceration.

In the commencement, this kind of scirrhus is difficult to recognise: it is only distinguished from the mammary tissue by a somewhat exaggerated consistence. Attentive manual examination discovers something like a little lump, which suggests the idea of an indurated inflexible lobe of the gland; around this lump, the gland itself seems rather less supple, and rather less extensible, than the corresponding parts of the sound side, or than the remaining parts of the diseased one. In this earliest stage it is, nevertheless, often impossible accurately to distinguish scirrhus from simple inflammatory induration, or from slight innocent hypertrophy. However, as scirrhus, even at first, is tolerably often accompanied by shooting, lancinating pains, and a sense of constriction in the breast, it is not difficult to recognise it from the moment that its development has proceeded to any extent.

Even to the very last this form of scirrhus preserves its hardness and ligneous character: it scarcely ever softens at the centre, and it finally ulcerates towards the skin. The ulcer which then excavates the surface is usually dry, of a reddish-gray, and sometimes violet colour, as if ecchymosed; and its edges are often thin, and appear as if punched out. Pretty frequently, too, its borders become lumpy or surrounded with reddish tubercles, jutting out in relief from the surface of the skin, and terminating, in some patients, by becoming scooped out below. In other respects the progress of scirrhus from this point is not widely different from that of the other varieties which remain to be pointed out.

B. *Ramose or Arborescent Scirrhus.*—A species of scirrhus that I have often met with, and which is only a variety of the preceding kind, is that which I described in the year 1826 under

the name of arborescent scirrhus (*squirre rameux*). It has not hitherto been sufficiently dwelt upon, and evidently depends on a special induration of the cellular tissue.

Case 1.—*Scirrhus, with fibro-cellular branches, in a woman of forty-eight years; extirpation; death.*—A very robust woman, who had never before been ill, was operated on for an enormous tumour of the breast of two years' duration, on the 3d of June, 1824. It was necessary to remove a large portion of the pectoralis major, and to scrape the ribs; and yet it was not certain that all the diseased structures had been taken away. There resulted a circular wound of more than nine inches diameter. On the 1st of July, the wound was reduced to the size of the palm of the hand, but the limbs shortly became infiltrated, and the chest seemed insensibly to shrink in on the affected side, so as to make respiration short and painful. The wound assumed a dull colour; the suppuration became serous, and no fresh granulations formed. Although under these circumstances it was evident that the patient would shortly die, it was still doubtful whether there were any cancerous formations in her viscera. Eventually, some months after, when the disease had proved fatal, we found, at the post-mortem examination, in the pleuræ, about two quarts of reddish serum; but no scirrhus or cerebriform tubercle, or any other accidental formation in any other part of her body.

The amputated mass weighed two pounds, and comprised the entire mamma. There was a thick layer of adipose tissue, and in its centre a fibrous nucleus, which was lardaceous, yellow, very hard and elastic; creaking under the scalpel, continuous with the cellular septa traversing the mamma, by so many rays, and eventually lost by diverging amongst the cellular or lamellar tissue of the neighbourhood, in such a way, that the further removed the rays were from the centre, the more supple did they become, reassuming by degrees their character as natural cellular tissue.[1]

I made the following observations at the time: "It is clear to me, that here we have not an accidental production, but rather a degeneration; and this statement I found upon many such cases." Placing the subject in another point of view, I also remarked, "that death was here the natural consequence of a loss of substance so considerable as to prevent the wound from com-

[1] 'Arch. Gèn. de Mèd.,' vol. xii, p. 511.

pletely cicatrizing. This form of scirrhus, *radiated scirrhus*, is altogether peculiar, and liable to terminate in this way, as I could show by the history of many other cases collected since the year 1824."

In the preceding variety the tumour preserves a globular aspect; and without much difficulty we discover how far it extends, and where it stops. The skin adherent to it is not depressed, degenerated, or ulcerated, excepting at some one point, or in the form of layers. Radiating scirrhus, on the contrary, extends itself like roots, amidst the neighbouring organs. It would seem as if the fibro-cellular spaces, the layers of the aponeurosis which make up the basis for the glandular tissue, were indurated and had undergone the ligneous transformation. Thence arises an irregular, hard, ill-circumscribed tumour, which becomes lost insensibly towards the skin, or towards the circumference of the mamma, in the form of rays, bridles, irregular septa or divergent cords. Nevertheless, this kind of scirrhus has a central nucleus, a sort of focus towards which all the radii of the periphery converge, or in which they all become lost. The integuments opposite this nucleus, like the integuments in globular scirrhus, are often depressed in the direction of one or more of the radii, so that folds and grooves, which are occasionally the seat of an ichorous discharge, of excoriation, or positive ulceration, form on the surface of the diseased breast.

It is to this species that allusion was formerly made, when cancer was compared to a crab; and no doubt, also, it was this circumstance which originated the name which the disease bears to the present day. In certain cases it looks, in fact, as if the mamma were occupied by an animal, the body of which is represented by the centre of the tumour, and the numerous claws by the indurated radii just spoken of.

It is, then, almost impossible to say exactly where the cancer terminates, or where the natural condition of the parts begins. On making a section of the mamma, we observe that it is partitioned off by hard layers, which are lardaceous in texture, of a dull grey or bluish-grey colour, and which creak under the knife. I have often seen these radii prolonged far into the axilla, bent up under the edge of the pectoralis major, or scattered in all other directions. Moreover, when ablation has been had recourse to, it is difficult to extirpate it entire, or to feel certain of not having left any trace behind.

One observation should not be lost sight of in the examination of this form of cancer; and it is, that there is no indication that it is the result of an exudation or heterologous formation; on the contrary, it is almost impossible not to admit that it results from a transformation, or degeneration of the normal elements of the part.

c. *Tegumentary Scirrhus, or Scirrhus in the form of a breast-plate* (*squirre en cuirasse*).—A variety of cancer which has been little studied by pathologists, and which nevertheless, seems to me deserving of especial examination, is that which I described, under the name of *ligneous scirrhus* in *plates*, or *diffused* over the mammary integuments. I have frequently met with it, and presenting such marked characters, that I am at a loss to know why it had not attracted attention before I myself described it in the year 1838. It is the skin, I remarked, which is its favorite locality; but at its commencement, as also in the highest stage of its development, it may also be met with in the other anatomical structures of the part. In some patients, it appears only as a complication, at a more or less advanced period, of some other form of the cancerous affection; in others, the scirrhus, whether ligneous or lardaceous, assumes this form from its commencement, in the deeper-seated parts; which circumstance, however, does not interfere with the fact that, in a small number of cases, it affects the integuments only, from the commencement to the termination of the disease.

Sometimes it occurs in a single disc, and sometimes at various points of the skin, each tolerably distinct from the other. In the first variety the integuments are hard to the touch, roughened, stiff, thickened, of a reddish tint, and of a stencilled grey colour, which is altogether abnormal. They look as if they were tanned, or as if a portion of stiff leather had assumed the place of the natural skin. In the second variety, the plates are smaller and as if disseminated, but at the same time presenting similar characters.

However, these two varieties almost always coexist, or become speedily confounded together. Usually there are large plates in certain situations, at the same time that a multitude of other spots are met with here and there in the neighbourhood. I have seen patients whose breasts were completely covered with them, and in whom the ligneous degeneration of the skin extended as

far as the axilla on one side, and towards the clavicle and in front of the sternum on the other. I have seen others, who, besides the principal patch, had the front of the chest furrowed with small secondary plates. I have also met with patients in whom the integuments of the chest were thus transformed into a genuine cuirass, of perfectly inextensible material, which presented some analogy to the skin of a dead person which had been hard frozen. Sometimes these plates are somewhat in relief externally, sometimes, on the contrary, they appear to be depressed, or retracted in the direction of the subcutaneous structures. I have seen some which were of a light copper colour, and which, to the eye, might readily have suggested the notion of a syphilitic affection, On section, it is easily seen that the skin forms the exclusive seat of the disease, and that, in degenerating, this structure, sometimes doubled in thickness, has acquired a density like that of tanned leather from the larger animals, or like the skin of a pig.

At its commencement, ligneous cancer of the integuments does not much attract the attention of patients; for it causes no pain, it gives rise to no exudation, and, as the skin alone is affected, it generally passes unperceived, until it has attained a certain degree of development. The practitioner, however, should never allow himself to be deceived, and I cannot too earnestly recommend him to be on his guard when he notices the existence, in the chest of female patients, of a marbling of a yellowish-red colour, or of stencilled grey patches scattered about here and there, especially if these marks are permanent, and if in place of being supple, and disappearing for the time under the pressure of the finger, they are found to rest on so many hard, thick, inextensible, or ligneous patches of the skin.

Notwithstanding their apparent benignity, these simple patches, which we may at first be tempted to neglect at the instance of the patients in whom they occur, are in fact genuine cancers, and of the worst kind. Separate from each other in the first instance, they terminate by becoming confounded together, by forming plates of larger and larger extent, and sometimes even a regular cuirass. Whilst the original patches thus become fused together, others usually appear in those parts which hitherto have remained sound, in such a way that the whole chest may perhaps be invaded by them. After a certain time, their apparent benignity disappears, and pain commences: the patient experiences heat, burnings, and shootings; soon sleeplessness, distress, anxiety, and loss of appetite are added to

these symptoms; and still later, the respiration becomes difficult, the movements of the chest are interfered with; it appears as if surrounded with an iron girdle, which, becoming smaller and smaller, threatens to stifle the unfortunate patient. This breast-plate, is indeed, in some cases, so hard, extensive, and so completely inextensible, and tends to retract and so powerfully to restrict or diminish the capacity of the thorax, that the play of the intercostal muscles, and the movements of respiration, cease to be possible. It is true, that before proceeding thus far, ligneous scirrhus often terminates either by undergoing ulceration at certain points, or by extending to the subjacent structures: then lumps of ordinary scirrhus are developed around the ulcers, and it is from the suppuration or from the pain, which in such cases may attain extreme acuteness, more than from the constriction of the thorax, that death is brought about. Amongst persons whom I have met with in this condition, I recollect an English lady who lived in the Champs Elysées, whose chest from the sides to the neck, from the umbilicus to the larynx, from the loins to the occiput, had undergone this ligneous transformation, and was moreover ploughed up with cancerous ulcers, with a number of cancerous bosses extending to the axillæ, and over the shoulders. This poor creature, whose arms were three times the natural size, and as hard as marble, had such short, imperfect respiration, that she resembled a person who is being strangled, or whose chest is violently compressed in a vice: she could neither move her arms nor her head, and experienced every moment the most atrocious pain, so that she exhibited, when I saw her with Dr. Skiers, her usual attendant, the most distressing spectacle imaginable, uttering piercing cries, demanding death, without having the power to destroy herself, and incessantly praying us to give her such a dose of opium as should send her to sleep for ever.

In the following case, carefully drawn from nature, we perceive that the patient, who came into the hospital full of health and spirits, and free from pain, although the two mammæ and the whole front of the chest were already affected, had not remained a month within its walls before a multitude of fresh patches appeared on the sides of the thorax, beneath the axillæ, and even behind and above the shoulders. Pain of burning character, attended with shootings, made its appearance at the same time, so as to interfere much with sleep, and to make the respiration difficult. This unfortunate person, there can be no doubt, will

soon find herself shut in by the iron-like cage which encircles her; in less than a year she will be stifled in this way, although, as yet, there is no appearance of ulceration, or of softening of the cancers, and there will be no necessity for the growths of these cancers internally.

Case II.—*Scirrhus in plates, or as a breastplate over both mammæ.*—Baillot, a sempstress, æt. 36, ill eighteen months, came into the hospital on the 26th of January, 1852, and went out on the 16th of February. The parents of this patient had always enjoyed good health; her mother died in her confinement, and she herself has always been strong and well. She appears to have a robust constitution, is lively, in good spirits, and does not seem to be much impressed with the serious nature of her disease. She was confined of a little girl twenty months ago, whom she nursed for two months. At that period she resumed the employment of stays, which she had discontinued whilst suckling; but as they were too tight, they distressed her considerably, especially beneath the left mamma. Shortly afterwards she discovered, in this situation, a little hardish painless lump; the induration extended around the gland, involved the breast itself, and subsequently the left side towards the eighth rib. Four months ago, the right mamma, which had hitherto remained unaffected, was attacked with the same kind of induration, which also spread over all the space contained between the two breasts, reaching to the top of the sternum above, and extending to beneath the xiphoid appendix below.

January 27th.—*Present state.*—Both breasts are somewhat larger than natural; the left is of its usual shape, but it is larger and rounder than the right, which, on the contrary, is somewhat flattened, as though glued to the subjacent tissues. The nipple is lumpy, pediculated and voluminous, spread out like a cauliflower, especially on the left side, where it is surrounded with a blackish nearly circular tumour, which, however, does not discharge any fluid. The tubercles covering the areola are very numerous and large.

The skin has an erysipelatous blush, being reddish here and there, especially on the right side, where it involves the right mamma, the surface between the breasts, and the structures below the left breast. In all these situations, the colour disappears on pressure, but returns again immediately. The temperature of the skin is not heightened, but it is tense and shining, and in certain

situations presents a fretted, burnt aspect, with little hard conical elevations the size of large millet seeds.

In consequence of the tension and colour of the skin, and the size of the mammæ, it is easy to predicate that the subjacent tissues are very dense and hard. The normal mobility of the integuments has disappeared, and it seems to form one mass with the other tissues. The breasts are firm, and polished like marble, and on pressure are observed to have the density of wood. The induration extends to both breasts, from the part above the sternum to the xiphoid cartilage, and the left side is also affected from the axilla to the angle of the ribs posteriorly, and as far down as the eighth rib below: on the right side the hardness is more uniform, more exactly circumscribed, and less extensive, terminating almost insensibly towards the middle part of the ribs. On plunging the fingers into the axilla, the tissues, instead of being yielding, as usually is the case, are found to resist, and to form, instead of a cavity, one or two masses of stony hardness.

The patient has no pain, and breathes freely. The movements of the arm are not interfered with: she can rise, and walk without difficulty, and the limbs are not swollen. The general health is good, and there is no fever.

January 31st.—The affection has not undergone any sensible increase, only the redness has extended a little to the right, and is more intense. The patient experiences pricking, a burning sensation, and a feeling of constriction of the chest, and of pain at the posterior part of the left shoulder.

She stated that she has a feeling of blood rushing to the head, and pain in the epigastrium. Whilst walking, there is some difficulty in respiration, especially when she takes a deep inspiration. She does not sleep at night, and has much perspiration. Digestion is good, and there is no feeling of weight in the stomach, and no fever.

February 2d.—The redness increases, and the scirrhus extends on the left side behind and below, as well as on the right; especially on the left there are some transverse, reddish, hard bands, projecting below the rest of the integuments, and invading the sound tissues. The left nipple appears to be detached from the breast by an almost circular ulcer, narrow, pretty deep, gray, or rather blackish in colour, and gouged out, from which there flows a sanious, yellowish, ichorous fluid, of characteristic insupportable odour.

3d.—The induration is advancing towards the abdomen, and when the patient is in the sitting posture, there are visible in the epigastric region two largish, transverse, very hard tubercles. She experiences a momentary feeling of stifling, and a sensation of constriction.

6th.—The induration and redness are extending to the left, in front and below. The patient has severe pain in the middle of the back, under the right arm, and in the left side. The sensation of stifling continues, and respiration was much embarrassed during the night. Suppuration is abundant. The patient is sad and depressed.

8th.—The affection is advancing in all directions, but especially on the left. The redness of the skin is rather less intense. The circular ulceration around the nipple has increased, and discharges a large quantity of fetid secretion. There is great pain, increased by the slightest pressure. The patient says, that she feels as if included in a circle of iron, and that a lump mounts from her stomach to the throat, and nearly stifles her, and that her bones feel bruised on the slightest movement. She can scarcely breathe, could hardly sit up yesterday, and could only lie down again with much suffering. For the first time there has been some fever, from the afternoon till 10 o'clock or till night. There is no sleep or appetite. The pulse is frequent, and the skin hot.

11th.—The stony hardness has extended above, and on the left side, and numerous hard patches of a red colour are to be felt over the lateral and anterior parts of the neck. The two arms are the seat of acute suffering, as well as the left side of the abdomen and the back. The patient turns her head with great difficulty, and can no longer raise the arms. The feeling of suffocation is often experienced: there is no sleep and no appetite.

13th.—The patches which appeared some days ago have increased in size, and are now continuous with each other. The neck is stiff, and cannot be raised above the pillow. The arms are painful, and the left one can hardly be moved at all. The fits of stifling are more and more frequent. The patient experiences a burning tearing sensation in the breasts, the back, and arms, and states that she feels as if she were squeezed in a vice.

16th.—In the same condition. She suffers greatly, but is so anxious to leave the hospital, that she was discharged on the 16th of February, 1852.

At first sight one would say that the skin of these patients had been burned, grilled, or roasted; it looks as if its density, its ligneous condition, in some sense, dried up the subjacent tissues, so as rapidly to make them undergo a similar transformation. In the patient just spoken of, also, the breasts, and all the tissues which enveloped the chest, were confounded together with the integuments, so as to form but one mass, one body, as in a marble statue, or in a dead body which has been frozen. It need not be added, though it is said by some patients, that this species of scirrhus is independent of all external violence, or of any appreciable mechanical cause. A sort of erysipelas or of eczematous eruption has marked its commencement in many of the patients that have fallen under my notice. We shall see further on that it is quite useless to attempt its destruction by surgical means.[1]

[[1] This form of cancer has long been familiar to many English surgeons, and we have seldom been without good examples of it, in the cancer wards of the Middlesex Hospital. So early as the year 1792, it was thus spoken of by Mr. Howard, in his 'Notes and Observations,' p. 68.[1]

"The miliary glands of the skin, in their natural sound state, are not easily discoverable by the touch; but, when enlarged by disease, may be perceived with the greatest ease. And, upon the examination of persons who have died with cancers of the breast, we sometimes find small glands (whether miliary or not I cannot say) deeper than the skin.

"It is extremely difficult to trace the first rudiment of a cancer from a primary affection of one of these miliary glands in the breast; it may, perhaps, be discovered early in cancers of the lip, and in the *noli me tangere* of the face. But upon the return of a cancer to the cicatrix, after an unsuccessful removal of the breast, I have frequently seem them, and could then mark their progress. They are at first very small, devoid of pain, perfectly hard and moveable, like peas under the skin; by degrees they increase in size, have a disposition to unite one with the other, as it were by a kind of attraction: but they are at first distinct, and often remain so. After a shorter or longer period, they become fixed posteriorly to the adjacent parts; though fixed, they still remain, for a time, indolent, and, even under slight pressure, insensible. As the tumour advances, the skin anteriorly is attached to its surface, and the whole becomes immoveable. In proportion as the tumour becomes enlarged and distended, so the skin appears upon the stretch, smooth, and shining, sometimes of a reddish-purple hue. If the tumefaction be small, it may remain in this state a considerable time; if the skin be much distended, it bursts, and the part ulcerates."

The progress of the disease is sometimes extremely slow; there is now a patient in the Middlesex Hospital, under the care of Mr. Shaw, who has laboured under it for a period of eighteen years, during eight of which she has been almost constantly an inmate of the cancer establishment.

In this instance, the affection commenced with a small tumour in the left breast,

[1] 'The plan adopted by the Governors of the Middlesex Hospital for the Relief of Persons affected with Cancer,' London, 1792.

D. *Ligneous (Stony Cancer) en masse.*— Sometimes, and I have seen many examples of it, cancer seems to attack at first a large portion or even the whole of the mammary gland. If the disease be already of some months' duration when the case falls under our notice, it then presents itself as a semi-globular mass, or as a sort of ill-defined hemisphere, but without radii or roots at its periphery. At its commencement, this species of cancer, which is hinted at in the description of cancer of the mamma in general given by Boyer,[1] occupies occasionally but a few lobes of the breast; but the bosses soon approach each other, and end by becoming confounded together. The secretory tissue is always the primary seat of the disease; the septa and layers of fibro-cellular tissue are only affected secondarily. The whole of the breast structures seem in some cases to be attacked altogether. I have frequently seen the mamma acquire the density of cartilage in the space of two months, without undergoing any marked change in form.

In one of the patients under my care, the left breast, which was not double its usual size, resembled a hemispherical mass of wood, inlaid as it were in front of the chest.

My opinions concerning the nature of such tumours being a that time less settled than they are now, I determined to remove the tumour; and, in doing so, it became necessary to remove the whole of the integuments as well as the breast. The wound left

which was excised, after it had been growing for two years; the mammary gland itself was not interfered with, and a portion of the wound never healed. Since then, the disease has spread over the whole chest to the opposite breast, and downwards, as far as the edge of the lowest ribs. The tumours commence, as small, reddish, slightly elevated shot-like indurations in the skin, which enlarge until they attain the size of a pea, when they ulcerate, and afterwards, not unfrequently, heal. Many coalesce together, so as to establish coppery, keloid-looking patches of some extent.

The mammæ were formerly voluminous, but have dwindled down until they are perfectly flat over the chest, which now appears as if it were encased in a rigid breast-plate of scirrhus. The disease did not spread from one side to the other, but commenced independently in each mamma, and then joined in the centre.

At times, there is much discharge, when the patient makes use of absorbent powders; and at other times, when the sense of constriction is distressing, she employs softening ointments or poultices.

Both the nipples are intact, and project on the plane surface of the scirrhus, like large warts.

Hitherto, the lymphatic glands have not suffered to any great extent, but are now becoming involved, especially on one side.—Ed.]

[1] Vol. vii, p. 223, edit. of 1821.

by the operation had become reduced to four fifths of its original size, and everything indicated approaching convalescence, when, at the end of six weeks, I observed that the right breast had become attacked in its turn, just as the left one had been a few months previously.

We were thus witnesses at the hospital to a transformation which gave the hardness of cartilage to the whole extent of the mamma in the space of two months, without the unfortunate patient, who suspected nothing, experiencing the slightest pain; without our being able to prevent the incessant advance of this singular kind of degeneration, or to point out any one part of the organ which was affected before the rest.

Contrary to what happens in the first variety of stony cancer described above, scirrhus *en masse*, arises and develops itself rapidly; the skin becomes involved almost as soon as the glandular tissue. This membrane, which rapidly loses its extensibility and its mobility, becomes glued to and mixed up with the gland, so that it can no longer be separated from it. It is often wrinkled or gets puckered in the process of hardening, and appears as if it were shrivelled up, even when the breast augments in size, instead of becoming atrophied. In such cases, therefore, we speedily have the association of stony integumental cancer, with glandular scirrhus diffused or *en masse* in a single tumour. The breast becomes hardened rather than swollen, and changed in character rather than deformed, although, nevertheless, in some cases it undergoes marked augmentation in bulk. All the anatomical constituents of the region, are confounded together in one mass, the boundaries of which are never well defined; and after a variable length of time, the tumour terminates either by becoming depressed or more prominent, and by softening or ulcerating at some part of its exterior. From that time these ulcers become excavated or hollowed out, and the sores which are thus formed, whilst usually remaining sanious, greyish, dry, or roughened, are often surrounded, in relief, with hard, festooned or irregular borders.

Scirrhus *en masse*, diffuse or general, is not always a primary form of cancer in the mamma: I have often met with it as a secondary disease, that is to say, as has been observed before, it often succeeds to that integumental cancer which resembles a cuirass. Differently to scirrhus properly so called, it attacks both breasts at the same time or successively. As it is not at first at-

tended with any pain, and does not cause any deformity to the chest, which at the time simply seems somewhat firmer or more rounded off than natural, the patients do not take any notice of it at the commencement, and rarely attribute it to external violence.

If, later on, the mamma should appear to be solidly fixed to the chest, it is less from the deep adhesions that it has contracted, than in consequence of the hardness, the inextensibility, and the retraction of the tissues which are proper to it. We might really say that all the constituent structures of the part thus affected were frozen, or had become transformed into a hemisphere of wood or cartilage.

E. *Atrophic Scirrhus.*—It is not uncommon to meet in practice with a species of scirrhus, the specific characteristic of which seems to be that it shrivels up the tissues or the organ itself. We observe it, in the first instance, producing a retraction of the nipple, which progresses sometimes rapidly, at others slowly and insensibly, and appears to become more and more sunk into the gland, so as at a later period to give rise to grooves and fossæ which become elongated like radii. The tumour, which is sometimes flattened and tolerably accurately limited, at others somewhat lobulated or furnished with roots, presents a depression towards the skin of greater or less extent, which proceeds to increase in size, until it ulcerates or becomes excoriated. The integuments, in other situations, soon become mottled, and then appear to be buried in the tumour.

In such cases the mamma, in which is included the scirrhus formation, rather diminishes than augments in volume. One might say that its septa and its fibro-cellular network, which are hardened, altered, and degenerated, have become the seat of a morbid change which tends to contract and draw them in, so that in undergoing this retraction like granulation tissue, they strangulate and in some sense include the cancer in their loculi and ultimate lamellæ. Thus, in fact, the whole mamma shows a tendency to become atrophied and reduced in bulk; so that pathologists have supposed that this strange retraction was a means employed by nature to bring about the cure and resolution of occult cancer. Unfortunately, this is only a pleasing dream. Should the mamma shrivel up, and wither under the influence of this pathological change, the remaining skin does not the less continue to exhibit the characters of cancer. Should the loculi and retractile septa,

end by becoming continuous with the skin which with so much force they drag in from behind, it is because they themselves have in such cases undergone the cancerous transformation, and because the integuments, septa, and fibro-cellular network, are no longer distinguishable from each other or from the glandular tissue, so that the whole eventually forms a single mass or series of homogeneous plates, like ordinary stony cancer.

It is true, however, that this species of cancer often progresses slowly, and that women may labour under it for years, without suffering much in general health; it is, in fact, in cases of this atrophic scirrhus, that patients have been observed to survive for ten, twelve, fifteen, or even twenty years. Cases of this kind might be quoted in numbers; and my own experience has presented me with several examples of it. Amongst others, I saw a Russian lady, who had been attacked in this way for ten years, and who had consulted the most celebrated surgeons in her own country, in Germany, in England, and also in Italy. Her cancer, which showed itself in the form of a rugged ulcer, of a yellowish-red colour, and in a flattened tumour of two and a half or three inches in extent, occupied the lower part of the left mamma, and seemed in some sense hidden below the circumference of the mamma, behind the base of the nipple. This lady who had also consulted M. Marjolin, and to whom we recommended palliative treatment, although her cancer could easily have been removed, remained under our observation for three years, during which time the disease had not increased by more than one fourth. We lost sight of her in 1843, and what occurred subsequently I do not know.

A Polish lady, whom I saw with M. Lebert, had a cancer in the left breast, of twenty years' duration, and I might easily cite four or five similar cases; but it is not the less true, that these are purely exceptional facts on which it would be extremely imprudent to build.

Atrophic cancer almost invariably occurs at an advanced period of life: it is, so to speak, the cancer of old women. Nevertheless, I have met with three or four examples in patients who had not reached the age of forty-five. When ulceration takes place, we see it increase little by little, and furnish a serous or ichorous discharge, generally in small quantity. The surface is usually dry, and sometimes rather velvety. It is not very uncommon to see such ulcers covered with a pellicle of cicatrix, or even to see them cicatrize entirely in a portion of their extent—only

whether they cicatrize or not, or whether new ulcerations take place, or whether the first ulcer persists, the disease does not the less continue to progress, and terminates, sooner or later, as in other species of cancer, by invading the neighbouring organs, and destroying the patient.

f. *Tuberculous* (*pustuleux*) *or Disseminated Scirrhus.*—We often meet with scirrhus in the form of tubercles, or little rounded or irregular masses; these tubercles, the size of which varies extremely, from a pin's head to a hazel nut, occur in some women as a primary disease, although, more commonly, they appear secondarily, as a consequence, or dependent on the extension of previous cancerous disease. Almost always multiple they nevertheless, sometimes in the first instance, occur singly. Their number, moreover, is not less variable than their size; and I have seen them, in the same patient, from four or five to many hundreds in amount. Their favorite locality seems to be the skin; sometimes they project on its free surface; at others, they seem to commence from the inner surface of the integuments, and make their way to the subcutaneous bed; and at others, they occupy the very structure of the skin itself. In the first case, they appear as granules, of a more or less pale red colour, hard, indolent, and presenting some analogy to the pustules of ecthyma, only that they have no tendency to softening or ulceration. They are distinguished, both by this circumstance and by their hardness, from altered hair follicles and from any other species of tegumentary pustule. I have seen patients whose breasts were covered with them.

In the substance of the skin itself, they can only be discovered by the touch. For this purpose, the pulp of some of the fingers must be carefully and gently applied, in the first instance, to the neighbourhood of the nipple, then to the margins of the breast, and lastly, over the whole surface of the chest. In this way, we discover some of these well-defined indurations, of a globular form, immoveably fixed in the cutaneous tissue, which, in these situations, cannot be depressed, as in the rest of its extent.

Beneath the integuments, the tubercles are to be discovered in the same way, and are distinguished from the preceding merely by their somewhat greater mobility and depth. Formerly, I thought that they only attacked the dermis or the subcutaneous layer; but repeated observation has since shown me, that the fact

is not so, and that tubercular scirrhus is developed just as much in the cellular tissue and in the glandular parenchyma, as in the skin itself.

Madame Du — had, in the left breast, a mass of lardaceous scirrhus the size of a hen's egg, which appeared to be pretty definitely bounded. After the removal of the tumour, I observed, with consternation, that there existed, a seed bed of small tubercles of the same kind, like the heads of pins, or grains of hemp, or lentil seeds, disseminated within the remaining part of the mamma, and in the cellular or fibro-cellular tissue of the neighbourhood. Nevertheless, the wound cicatrized; but in less than a fortnight after it had closed, the tubercles which had alarmed me in the first instance, could be felt through the skin, and similar tubercles began to show themselves externally, in the substance of the skin itself. They were thus successively developed to an infinite extent; and I need not add that the unfortunate lady, the whole of whose mammary region in a short time became affected in this way, died at the expiration of a few months, from the effect of this frightful growth.

It would seem, in fact, as if the destructive agency had thus scattered the cancerous granules liberally amongst the tissues, or, as if the whole economy thus infected with the cancerous diathesis had endeavoured to get rid of it by casting it out in the form of molecules or germs amongst the structures of the mamma.

Although hard, and in appearance ligneous, the disseminated pustules of cancer are, nevertheless, not always homogeneous in texture. They are generally less condensed than scirrhus *en masse*, or in plates, and their consistence which is often the same throughout, is also, at times, softer in the centre than at the external part. There are some which undergo a sort of softening in the middle, so that at length, their centre contains a quantity of whiter and more broken down pulpy or semi-purulent matter: this degenerative process in some degree resembles what occurs in tubercle, or in the small hard deposits that form in diseased lymphatic glands.

In returning, these pustules often occupy the immediate neighbourhood of the cicatrix; later on, others form at more distant parts, above, below, on the outside, on the inside, and, in fact, everywhere. I have several times seen leech-bites become the seat of them; they may arise, in fact, from the smallest irritation or alteration in the skin.

Madame de V—, on whom I operated originally for lardaceous cancer of the left mamma, and who to all appearance was completely well, experienced a return of the same disease on the inner side of the cicatrix, at the end of six months. Even then the tumour was without complication, and there was no appearance of a similar disease in the axilla or its neighbourhood, and as the case occurred in a person otherwise in good health, young, and of resolute character, the cancer was extirpated anew, at the end of six weeks. Then, when cicatrization was almost complete, I noticed above, and shortly afterwards, in less than ten days, below, and also on the inner side of the wound, three little hemispherical tubercles, reddish in colour, and of the size of a pin's head, projecting on the surface of the skin, like the pustules of variola, at the third day of eruption, and which the patient herself took for leech-bites, that had become somewhat indurated. These tubercles which did not interfere with the healing of the wound, gradually increased in number, without exceeding in size a grain of hemp seed or a very small pea. In the space of three months, some leech-bites which had been left from former attempts to cure the cancer, became changed before my eyes, into so many little cancerous tubercles. It was remarkable, that three little tubercles of this kind arose at three different parts of the cicatrix, although there was no scirrhous formation under the integument; but, in other respects, they precisely resembled similar formations in other parts of the skin. The family of this lady, alarmed at my unfavorable prognosis, consulted other practitioners, and I have ascertained, that she died in the spring of 1853, after having submitted to all kinds of treatment, which she had been told would cure her.

G. *Cancer of the Lactiferous Tubes.*—A variety of cancer which, so far as I know, has never been described, and which I have met with on six or seven occasions, seems to originate in the milk-tubes. The first case of the kind that I operated on, occurred in a woman under my care, in 1833, at the hospital of La Pitié. The patient died from the return of the cancer. On section, the tumour looked like the nose of a watering-pot, and pressure gave exit to an abundance of cancerous juice, in the form of little drops. On dissection, we found it to be made up of numerous hard, lardaceous, excavated rami, occupying the place of the natural tubes of the gland. The wound was already two

thirds healed, when towards the axillary angle, it all at once gave exit to an ichorous discharge. Having perceived three open orifices at this point, of about a line in diameter, presenting the appearance of venereal chancres, and seemingly continuous with some or other of the vascular tubes, I came to the conclusion that the disease was about to return. These little ulcers were lost in the midst of indurated lumps, and could be penetrated by a fine probe to three or four lines; and, as they were painful, and the neighbouring glands commenced to enlarge, I laid hold of them with a hook, and extirpated them. The wound healed: an abscess, which formed in the axilla, was opened, and disappeared; but at the expiration of a few months, fresh cancerous formations appeared around the cicatrix. In another patient, whom I operated on, at La Charité, the tumour, which was of eighteen months' duration, had been preceded by natural lactation, and could not be traced to any external injury. Somewhat flattened, and hardly painful, it was as large as half an ostrich's egg, and occupied the whole of the right breast. Slightly lobulated, unadherent to the skin, and without any dragging at its circumference, it exhibited on dissection a very peculiar structure. In consistence it did not much differ from scirrhus; but its section, in place of being homogeneous, was stencillated, stained with greyish dots, like a piece of granite, and covered with a large number of open orifices, which gave it the appearance of a sieve or strainer. These orifices, which were found everywhere where the tumour was divided, and which amounted in number to several dozens, were from one to three millimetres in diameter. Partly filled with caseous material or tuberculous concretion, they were altogether confounded behind with the tissue of the mamma itself, and everywhere followed the direction of the milk-tubes. They also readily admitted a probe, to the depth of several centimetres:[1] some of them, in fact, we could follow to the root of the nipple, and thus convince ourselves that they really were the excretory ducts of the gland. All the other constituent elements of the part were moreover indurated, changed in character, as in scirrhus, and it was absolutely impossible to distinguish the lobules of the gland from the fibro-cellular structures. We were particularly struck with their grey ash-coloured, or even somewhat reddish appearance, like a partridge's wing, or

[1 A centimetre is about two fifths of an inch.—Ed.]

like little chancres, at the orifices of the different tubes. The patient, who was still young, recovered perfectly; and having been operated on in 1835, I saw her again in 1836, when there was no indication of the return of the disease.

At that time, the microscope was not much employed in the examination of tumours; but with this excepion, everything about these patients indicated the existence of scirrhus or cancer. It must be admitted that in the midst of a stony mass of tumours, which in other respects have all the characters of scirrhus, it would be difficult to decide whether such little tubules were excretory radicles of the breast, or small arteries, veins, or lymphatics. In the last case, that I have just spoken of, we can have no hesitation in admitting that what we saw were really milk-tubes; but in my first patient, how can we consider as milk-tubes what were met with towards the axilla, a part so completely separated and removed from the mammary gland? If M. Giraldes,[1] and especially M. Sappey, in a verbal communication to me, had not recently come to the conclusion that the mamma contains a great number of lymphatic vessels, I should regard it as incontestable that these cases really involved a cancerous degeneration of the excretory system of the breast; but considering the results that these observers have arrived at, it seems to me prudent to suspend any decisive opinion on the subject. However, in whatever manner we regard it, this form of cancer ought not the less to constitute a distinct variety. In appearance it differs so markedly from all others, as at once to surprise and attract our attention. Externally, as regards the integuments, the tumour is not distinguishable from ordinary scirrhus. In two patients, it occupied only a fourth of the mamma; in two others, it seemed to have affected the entire gland; and in two more, the tumour presented this stencillated appearance only in some portions of its substance.

One of the tumours was so hard, that in cutting it, the knife produced a noise analogous to that which occurs when a cutting instrument meets with cretaceous formations in the midst of the tissues. In fact, in these cases some of the little tubes with open mouths are as if petrified or ossified. The principal mass of the tumour cannot by any means be separated from them, and seems to be made up of well-characterised scirrhus.

[1] 'Surgical Anatomy of the Region of the Mamma.'

The cancerous juice could not always be clearly distinguished, although it really existed. There was no possibility of isolating it from the concrete material which was contained in the scirrhous tubes, except, indeed, in the case of the patient in the hospital of La Pitié. Not being able to recognise the disease before the operation and not knowing positively what has since become of the patients, whom I operated on, and having, moreover, examined this kind of scirrhus only in a very small number of cases, the general history that I have now given must necessarily be incomplete; in fact, my present intention is merely to call the attention of pathologists to it, and to caution practitioners no longer to confound it with the other varieties of cancer.

§ 2. LARDACEOUS SCIRRHUS. — Another variety of cancer, which seems to me, still to belong to scirrhus, though not to stony scirrhus, and which almost exclusively occurs in the breast, appears in general in the shape of masses which are in the first instance somewhat deeply situated. It is probable, that at the commencement, this form of cancer affects only some of the lobules or strata of the part, and I have scarcely ever met with it but as a tumour which had already attained some size. It must also be added, that at the commencement, it must be difficult to distinguish it from certain sub-inflammatory or hypertrophic indurations. Whatever its nature may be, we meet with lardaceous scirrhus in the form of hemispherical tumours, somewhat irregular, or slightly lobulated on the surface. For a long time the tumour remains independent of the skin, and even of the subcutaneous structure: a large part of the mamma is usually at once affected, and the swelling is continuous without any line of demarcation whatever, with the glandular parenchyma. There does not seem to be any branch or root proceeding from it to become lost in radii amongst the neighbouring tissues, as is the case in ramous scirrhus. The gland thus affected is plainly thicker and harder at the diseased part than anywhere else, and the tumour at first has no tendency to pucker or retract either in one direction or in another. Its degree of density also is sensibly less than that of ligneous scirrhus, but, nevertheless, is still considerable enough to prevent its being confounded with the softness of encephaloid cancer. Yet it has not the elastic consistence of fibrous tumours; in this respect, it rather presents some analogy with the velvety density of adenoid tumours, from

which, however, it differs essentially, in its evident continuity with the healthy tissues of the part, and in the absence of any globular relief or mobility amidst the surrounding structures.

I have met with two varieties of this cancer, one which attacks the whole mamma all at once, as in stony cancer *en masse*, of which after all, it is, perhaps, only a variety. The mamma, when thus affected, augments in size, hardens, and is not long in becoming confounded together with the integuments. However, unlike stony cancer *en masse*, lardaceous cancer in this, as in the other form, is susceptible of a considerable increase in size, and has by no means the consistence of wood. Its hardness is something which seems to me pretty accurately characterised by the epithet lardaceous. In the other variety, which I have chiefly met with in women of a certain *embonpoint*, the tumour, at first situated pretty deeply, seems as if lost amidst the cellular fatty tissue and mammary gland. It then increases in size, sometimes with a certain degree of slowness, but usually very rapidly, in every direction at once. Unlike stony cancer, it reaches the integuments only at a very late period. In Madame L—, a patient of Dr. Denis, the tumour remained, as it were, lost in the substance of the breast for more than six months before becoming perceptible beneath the skin. The mass, which exceeded the size of a fist when I extirpated it, in 1848, still remained entirely independent of the integuments.

Usually these tumours do not get painful until a very advanced period of their development. In growing old, their tissue becomes rarefied, or tends to soften rather than to harden, or to become retracted. If time be allowed for them to undergo all these changes, they eventually advance to the skin, which becoming involved, inflames, or ulcerates. Thence there forms a cavity or foul excavation, which is sometimes deep and irregular, sometimes superficial and tolerably smooth. Many women are affected with this kind of scirrhus for several months, without having the slightest suspicion of the fact, and become aware of it only at a time when the tumour already exceeds the size of a large egg. A patient from the country, who was sent to me by Dr. Béhier, who was otherwise strong, only thirty-two years of age, unmarried, and extremely handsome, had a tumour of this kind in the left breast, which had attained the size of the fist, without her having any suspicion that she laboured under serious disease.

Another lady, who frequently came to consult me, had the

whole of the left breast transformed into a lardaceous mass; the integuments, the cellulo-fatty tissue, the fibro-cellular and the glandular tissue were mixed up together, so as to form a homogeneous hemisphere the size of two fists. Nevertheless, this patient did not consider herself ill, and seemed to be surprised because I attached importance to the condition of her breast.

On dissection, lardaceous cancer appears less hard and less stony than ordinary scirrhus. It is more easily cut, and creaks less under the knife. Its density is almost homogeneous, and non-concentric, that is to say, its consistence is not always greater towards the centre than at the circumference, as is the case in stony cancer. The boundaries of the tumour become lost in the neighbouring tissues, but without branches or roots being detached from it. Instead of a greyish-blue or brown colour, stencilled with white, as in stony cancer, a section of lardaceous scirrhus is somewhat marbled, and presents shades of a light brown, yellow, white or reddish-white. One would say, that it was a mixture of encephaloid tissue, and of incompletely formed scirrhus, associated with the indurated or altered elements of the mammary gland, and it is only with some trouble, that one can express from it the creamy juice of cancer, and that usually in small quantity.

Hitherto, also, I have met with this kind of cancer in one situation only, in the same woman, whilst stony cancer *en masse* frequently attacks both mammæ, either together or successively.

Few cancerous tumours progress more rapidly than this, and there are equally few which seem, in the first instance, to affect the general health so little. It is in this variety of cancer that I have most frequently met with scirrhous tubercles scattered underneath the skin, or in the parenchyma of the mamma, or in its cellulo-fatty envelope. Moreover, as I shall have occasion to observe later on, it is one of the most formidable varieties of cancerous disease, one of those which will most certainly abridge the patient's life, and which, when once removed, returns with the greatest obstinacy.

From what has been said, it is easy to see that scirrhous cancer presents at the bedside of the patient a considerable number of varieties, which may be summed up in the following manner.

Stony Cancer—Lardaceous Cancer.

Stony cancer: parenchymatous, including partial or globular

scirrhus: diffused parenchymatous scirrhus, or *en masse*; ramose or radiated scirrhus; scirrhous in sheets, plates, or *en cuirasse*; pustular (tubercular) scirrhus, scattered either in the skin or in the parenchyma of the gland; atrophic scirrhus; scirrhus of the milk-tubes.

Of *lardaceous scirrhus* there are only two varieties: scirrhus partially lardaceous; diffused lardaceous scirrhus, or *en masse*.

No doubt these different forms of cancer must not be considered as species absolutely distinct in essence; they all acknowledge the same base, the same nature; there is not one of them which is not as it were mixed up with the natural tissues, which does not seem to be constituted by a degeneration or transformation of the primary anatomical elements of the part, rather than by a deposit of abnormal materials. Although so much combined with the natural tissues, as to make all distinction impossible, scirrhus does not the less display the characters proper to each variety of it; that is to say, it occurs under the aspect of tumours, or of hard plates, furrowed, lobulated, or irregular, frequently adherent to the skin, and at times the seat of lancinating pains, which are sometimes acute, sometimes moderate.

When ulcerated, these tumours seem to become more excavated, hardened, and dried; they are not enveloped in any sort of cyst, but get rarefied and lost by insensible degrees amidst the neighbouring tissues; and from them it is usually possible to extract by pressure a sort of creamy caseous or semi-purulent matter.

In their commencement and in their termination, as also in their intimate nature, the different varieties of scirrhus of which I have spoken, are so little distinguished from each other, that it is difficult to avoid confounding them together. It is only in their middle period that they can be well distinguished; but at that time they present such well-marked characters, that they at once strike the eye of the least attentive observer, or even of persons unacquainted with medicine.

II.—ENCEPHALOID.

Medullary cancer, the encephaloid or fungous cancer of Laennec, which includes the *spongoid inflammation* of Burns (1800), the *fungus hæmatodes* of Hey (1803), of Wardrop (1809), and the *pulpy*

medullary sarcoma of Abernethy (1804), constitutes another form of tumour which is often met with in the mammary region; this, indeed, so to speak, forms its seat of predilection. Absolutely, there are more examples of encephaloid of the breast than of any other part of the body, or of any other organ, including the testicles, the eye, and the tongue, in which situation, nevertheless, this species of cancer is not rare; but, relatively speaking, the disease is more common in these latter organs than in the breast. Out of 250 cancers of the breast, of which I have notes, there were but 60 encephaloid to 190 scirrhous cancers.

Tumours of this kind form two varieties which, in a clinical point of view, we are obliged to study separately; the one might be called fungous, the other is tolerably firm and as if lardaceous. In both varieties the tumour presents itself in the first instance under the form of a small globe or ball, which is usually situated at some depth in the tissue of the gland. Although rolling and moveable, it does not seem to be altogether independent of the tissues surrounding it; as it increases in size, it spreads out on all sides without losing its rounded form; and, in a short time, it projects externally and raises up the skin, which becomes thin and confounded with it, and grows red without at first being inflamed.

Lardaceous encephaloid often presents but one boss on the surface of the breast, which readily suggests the idea of a superadded tumour, of the top of a penny roll (*tête de brioche*), deeply imbedded in the principal mass, and which in such instances long preserves its primitive density.

By the aid of the fingers, we recognise the existence of a larger mass under the external projection, forming one body with the mammary tissue, whose limits, nevertheless, appear to be pretty well defined; this deep-seated portion, the surface of which is tolerably uniform, without being perfectly smooth, and whose consistence recalls to mind that of sub-inflammatory engorgement, is usually moveable on the surface of the chest.

Not projecting but after the duration of several months, the disease until that time bears a strong resemblance to an adenoid tumour; nevertheless, from the commencement, as also later on, the tumour is never absolutely free amidst the tissues. By means of pressure, we can only displace it in company with that portion which conceals, and, in short, is continuous with it;

its development, also, is tolerably rapid; and it is rare that, at the expiration of a few months, it does not project externally.

Far from drawing the skin with it, and giving it a stencillated, wrinkled, or shrivelled appearance, as in scirrhus, the tumour, on the contrary, presses against and thins the integument at the same time that it communicates to it a greater degree of polish and a shining aspect; the cancerous boss becomes by degrees red, yellowish-red, violet, or dark-coloured, without ever assuming the appearance of inflammatory redness; with the consistence of a potato somewhat softened and more elastic, there exists, however, such extensive adhesions, that even on dissection there is no possibility of drawing a line between it and the integuments.

When removed from the organs in which they occur, these tumours are found to have a concrete tissue, solid like that of a turnip, incapable of being crushed between the fingers, and the more homogeneous and different in appearance from the healthy tissues, the nearer the parts we examine are to the external tissues. On their deep-seated surface the section is less nappiform and more lardaceous, and we recognise still the primitive structure of the mammary elements, or a fibro-lardaceous mass of greater or less density, intimately mixed up with the natural tissues of the part; this section is generally of a reddish-white or homogeneous grey; a brown tint generally predominates, but we do not meet either with the stencillated grey, nor with the bluish nor semi-diaphanous aspect, nor with the metallic sort of noise which is so often presented by scirrhus.

The *fungous* and *knotted* form of encephaloid often commences, also, by a rounded or globular tumour, situated sometimes deeply in the mammary tissue, sometimes beneath the skin, with the appearances of an innocent tumour. As at first it causes neither uneasiness nor pain, patients and their medical men hardly have their attention directed to it, until an advanced period of the disease. It is this form of cancer which developes itself with the greatest degree of rapidity. I have several times seen it attain the size of the fist in less than three months; and it is not rare for it, in the long run, to reach the dimensions of a child's head, or even that of an adult. The largest malignant tumours of the breast, are almost always encephaloid in character.

The tumour sometimes seems soft, elastic, and supple, from its commencement. Afterwards, it almost always becomes lobulated

as it increases in size, and soon it seems to be made up by a series of lumps or lobules, or of small balls confounded together into one mass, and entangled amidst the healthy tissues. Having a tendency to advance towards the surface rather than to increase in depth, it is not long in involving the skin, which soon becomes adherent, but does not grow thin nor get coloured with the same degree of rapidity as in the preceding form.

Nevertheless, it is rare for all the lumps to have the same consistence, at a somewhat advanced stage of the disease. It has often occurred to me to discover some in the same tumour, which had still the density of lardaceous engorgements, whilst others were elastic and fungous, at the same time that the rest were soft and fluctuating. It is with this kind of cancer that it is, perhaps, difficult not to regard the disease as a collection of blood or of serum, or of pus; although, in reality, there is only the matter of encephaloid tissue in the tumour. On dissection, encephaloid fungus shows itself under the form of lumps, which are almost always multiple, always numerous, and united together by lardaceous septa. Of brown tint, and tolerably homogeneous before becoming softened; these lumps in other cases give the notion of the gray matter of the brain, and are easily crushed under the finger. Besides the pulpy matter which we can easily express from them, they contain a fibro-cellular network, mixed up with a tolerably rich vascular plexus.

When once softened, the lumps of the tumour become at times transformed, as it were, into a reddish pulp or species of bouillon. Medullary encephaloid in other respects is continuous, like lardaceous encephaloid, with the permanent tissues of the mammary region, and with the integuments, without its being possible accurately to indicate their reciprocal limits, or to point out the slightest line of demarcation between them.

Transformations.—Encephaloid tumours undergo, during their development, transformations or changes which the practitioner should by no means neglect.

Cysts.—I have seen encephaloid lardaceous cancer give rise to the formation of hæmatic cysts in three different patients, and to serous or hydro-hæmatic cysts in many others.

Madame L—, the wife of a physician at Paris, formed the subject of one of these cases. The tumour was situated in the left breast, and at first had only the size of a flattened egg, surmounted with a boss the size of a nut, which she noticed little by

little to project, to soften, and to quadruple in size. I made a puncture into it at the early part of the year 1851, and drew off more than an ounce of serous fluid slightly tinged with red. Since then the solid base of the tumour has continued to increase, the serous discharge has never dried up; and at the present time, 1853, the encephaloid nature of the disease is no longer doubtful.

It is in cerebriform or fungous cancer that these sort of cysts are most frequently met with: in lardaceous cancer there is usually but one, which almost always occupies the most prominent boss of the tumour; whilst in fungous cancer, the tumour generally presents several of them at once, which then exist both amidst the deep-seated tissues, and beneath the integuments. It should be added, that with fungoid cancer, the matter of the cyst, which is often serous or simply bloody, is sometimes also made up of a mixture of medullary matter, with blood and serum, &c.

Purulent depositions are possible in both varities of encephaloid cancer. I have, however, met with them more commonly in the lardaceous than in the medullary form, and they depend upon the circumstance, that one of the bosses of the tumour has become the seat of inflammatory change, from which a collection of pus has formed, as occurs in the natural tissues. Still it is rare for the pus to be perfectly pure, homogeneous, creamy, and well digested; generally it is only an ichorous, milky, grumous, reddish liquid, the formation of which is ushered in by pain, heat, and inflammatory redness in that portion of the tumour in which the abscess is about to take place.

Ulceration.—When neither cyst nor abscess forms in encephaloid cancer, and when it is left to proceed uninterfered with, it terminates by ulceration. From that period the forms of the disease usually follow a very different course. In lardaceous cancer, the tumour becomes hollowed out, and excavated, by the falling in or putrescence of some of its bosses: its tissue softens, and seems to decompose; the borders of the ulcer project, become rounded off, and themselves lobulated, and red or livid in colour; the adhesions, and the confusion of the skin with the fundamental tumour, extends day by day towards the circumference; excavations and irregularities form by degrees under the everted borders of the ulcers, from which there daily escapes an abundant foul discharge.

Fungus.—In fungous cancer the destructive process follows

another course; the skin, once ulcerated, soon becomes covered with vegetations, with soft mushroom-like medullary growths, reddish in colour and bleeding. In proportion as these mushrooms increase, and their growth is usually very active, they evert themselves towards the integument, which they excoriate both on the outside and on the in, at the same time that fresh bosses augment the size of the opening. As the fungous tissue, hitherto unchecked in its progress, softens at the same time that it gets rarefied, we frequently see enormous masses become detached, either under the influence of the slightest traction, or after undergoing mortification from failure in the circulation.

In this way considerable masses may be separated, like mushrooms, the size of the fist, without the tumour ceasing to preserve at the bottom of the breast a tolerably large base, which is always fungous, or somewhat lardaceous.

It is with these vegetations that successive and often very abundant hemorrhages supervene, so as to compromise the life of the patient. Such fungosities can be broken down with the greatest facility, with even more facility than cerebral matter itself, since the vascular network, the fibrilous or cellulo-fibrous tissue of encephaloid, thus rarefied or thinned, is generally less compact than the lobules of cerebral tissue still continuing beneath the skin. If we carry the finger over tumours of this kind, it is easy to crush them, and to empty them as one would a cavity filled with pulpy matter. This peculiarity is, however, far from appertaining exclusively to fungous cancers of the breast, I have very frequently met with it in the uterus. How many times have I not found the vagina filled with encephaloid masses equalling in size the head of a fœtus, which I could crush and extract with the hand without giving rise to serious hemorrhage! How often have I not seen the cavity of the uterus itself greatly extended, or entirely occupied by such tumours, in so soft a condition that I could empty them like a vessel, either with the finger or with a scoop, without provoking any bleeding of consequence!

Who has not, like myself, seen the nares, the maxillary sinus, the orbit, and sometimes all these cavities filled at the same time, and distended with fungous or medullary masses, which it was easy to crush, and push in the direction of the pharynx or nose, so as to remove them simply with the finger, and without the aid of any cutting instrument? Who does not know, that in all these

cases, the hemorrhage stops of itself, in spite of such a degree of tearing?

Encephaloid cancer, when it has reached a certain stage, naturally tends, as has been observed by M. Lebert,[1] to soften, and even in some cases to become liquefied. Thus it has happened, although rarely, that the whole tumour, escaping by degrees through the ulcerated opening in the skin, has become in some sort *strangulated* in its root, after sprouting largely in front under the form of a vast medullary mushroom, and which, having become gangrenous, has ended by ridding the patient of its presence for some time.

Ichor (discharge).—Another accessory of ulcerated cerebriform cancer, is the discharge of a matter which is usually serous, of reddish colour, like the washing of meat, of a nauseous, often insupportable odour, always easily recognised. This matter, which sometimes escapes in considerable quantity, and communicates to the linen that imbibes it a yellowish-red tint, flows without cessation from the fungus, or whole ulcerated surface of the tumour, so as daily to wet through large thick folds of linen, to such an extent that portions of the dress, and even the neighbouring tissues, look as if they were macerated. A lady whom I saw with M. Cruveilhier, in November, 1850, wet through in this way as many as ten or twelve towels every twenty-four hours. This matter never resembles pus; it is a watery or reddish serum, always very fluid, and of a penetrating odour.

After all, literally speaking, it is sufficient, in order to distinguish scirrhus from encephaloid, to attend to two observations: the one is, that scirrhus almost always tends to involve the skin in its neighbourhood, from the moment that it attacks or invades the part; the other, that encephaloid pushes before it, and makes this membrane prominent in front, at the same time that it thins it, and endeavours to perforate or destroy it. In this point of view, at least, it seems to me useful to preserve as separate species scirrhus and encephaloid.

III.—MELANOSIS.

Some modern works[2] tend to the conclusion, that melanotic cancer is by no means a particular species of cancer, but that the

[1] 'Traité du Cancer,' p. 66, a statement controverted, however, by M. Brocca, in the 'Mémoires de l'Académie,' &c., p. 542.

[2] Bérard, 'Dictionnaire de Médecine,' t. vi, p. 297.

tumours which are thus called are ordinary cancers impregnated with carbon, hæmatine, or pigmentary matter. Partly supported in this opinion by M. Lebert,[1] who nevertheless admits melanosis, at least, as an independent form, and especially by M. Broeca,[2] this doctrine does not interfere with the view of M. Maisonneuve,[3] who preserves melanosis as the title of a special variety of cancer. Without absolutely denying that for which there may be some foundation, in the objections of M. Bérard, I cannot forget what there is peculiar in certain black cancers. For instance, it is incontestable that such tumours appear in the form of flattened masses, or lumps, or tubercles, sometimes of a yellowish or reddish-black; sometimes of the colour of ebony, with a soft, lardaceous, or semi-fungous consistence; and that these tumours, which remain independent of each other, and the development of which is usually rapid; which are often multiple from the very commencement, which rapidly affect the lymphatic system; which, when once ulcerated, vegetate like mushrooms; which, moreover, in all other respects, behave like encephaloid cancer, present from the commencement to the termination, a reddish-brown texture, often contain a thick pap, black as ink, and usually enclose only a very imperfect organic basis. It is difficult, as it seems to me, to see in such productions only an accidental circumstance, a progress, or a phase of some other cancerous tumour.

Masses, lumps, and carbonaceous lobes, filled with black matter, infiltrated, as it were, are no doubt met with pretty frequently in encephaloid cancer, in a similar way to what is occasionally seen in infiltrated or clotted blood; but these complications of the texture of encephaloid, scarcely resemble, in my opinion, the intimate combination and texture which exists in melanotic tumours, properly so called, and which I believe makes it necessary to use the term melanotic cancer.

In the mamma, I have seen but two cases of melanosis; and the two females who were thus affected had the disease at the same time in different other regions of the body. In one of them it was the right breast which was thus affected, and the tumour, the size of a five-franc piece, was situated almost exclusively in the skin, was only two fifths of an inch in thickness, was ulcerated at two points, and discharged a

[1] Op cit., pp 11. 12.

[2] 'Mémoires de l'Académie de Médecine,' t. xvi.

[3] 'Leçons,' &c., pp. 90—93.

blackish ichor tolerably abundantly: in the other, the cancer, the size of a hazel nut, situated on the outside of the left nipple, was at the same time lobulated, and moreover everywhere solid. Both these patients died without operation, with a multitude of small melanotic tumours in the skin, in the glands of the neck, and in the viscera, all of which presented the same anatomical characters, and had the homogeneous section and black colour of the best-marked melanotic cancer.

If, as some persons have maintained, the black colour of cancer were due to the richness of the vascular tissue of the organs, the tumours which succeed the primary growth, but in different organs, would lose this characteristic. But it is not so. Melanotic cancer of the great toe, was followed by a growth of the same kind on the inner and lower part of the thigh, and the glands of the groin soon became the seat of similar disease. A melanotic tumour of the orbit was followed, after it had been removed, by a reproduction in the liver, abdomen, and even in the substance of the muscles; all the tumours without exception, and there were several hundreds of them, were black, and completely melanotic, on the surface of the peritoneum, both intestinal and parietal, on the bladder, in the substance of the abdominal walls, and they existed both as hard and pultaceous masses.

A patient who was operated on for a melanotic patch on the foot, had a cancer as large as the thumb in the corresponding groin. This tumour was removed in my presence by M. Follin, and presented all the characters of melanosis, as we had seen it less than a year before in the small tumour of the toe. Moreover, melanotic cancer contains a great proportion of cells, of nuclei, and cancerous nucleoli, of blackish granulations, which are delicate and very abundant, as well as other rounded regular cells, equally furnished with a nucleus, and with similar granules in their interior.[1]

[1 The opinion usually and probably correctly entertained in this country upon the subject of melanotic cancers, is, that they are medullary cancers, associated with a deposit of ordinary black pigment matter. Mr. Paget believes, that there is much less difference between medullary cancer and melanosis, than between the former and scirrhus, or epithelioma. No one here entertains the notion, that any of their characters are dependent on the presence of hæmatine, or on the vascular tissue of the organs in which they may happen to be seated. Assuredly, there is something strange in this proneness to the secretion of large quantities of pigment; but, considering its congenital absence in the Albino, and the frequency of innocent melanotic tumours in the horse, we must look beyond this characteristic for the peculiarities of melanotic cancer.—Ed.]

IV.—CHONDROID, COLLOID, AND FIBRO-PLASTIC CANCER.

Microscopists have given the name fibro-plastic to a certain class of tumours which are still rather ill defined, and which seem to me to form, at least most of them, portions of the great family of cancers. This name, moreover, can only be accepted provisionally, since it comprehends in fact other tumours, the appearance, and I believe also the constituents of which, are altogether different. Thus *napiform, condroid, colloid, osteophyte* tumours, and *keloides,* are filled with fibro-plastic elements; and, nevertheless, how great is the difference between these various tumours, when we follow them out to their termination at the bedside of the patient.

§ 1. NAPIFORM OR FIBRO-PLASTIC TUMOURS PROPERLY SO CALLED.—There is a variety of tumour, which I have met with in the breast, but much more frequently elsewhere, which constitutes again another form of genuine cancer. Hard, like fibrous tumours, but still more compact than they or than adenoid tumours, these growths are more fibrillated, although equally as firm and solid as the texture of potatoes. Sometimes commencing in the deep-seated structure of a part, they may remain independent of the skin for a lengthened period. Whether, as frequently happens, they invade this membrane, or are originally developed in it, they only colour it moderately. Indolent, in the first instance, they remain like scirrhus, up to an advanced period of their existence. They do not, except occasionally, soften or become fungous as they grow older; the ulceration which attacks them towards the end, destroys and furrows them more like scirrhus than like encephaloid. If their bosses tend to project externally, they do not the less form in their interior a homogeneous mass, usually destitute of septa, and the section of which shows no trace of exudation or of cancerous juice.

Those which have softened may become so spongy in their character, as to give to the hand which is examining them, the idea of fluctuation, and to make the distinction between them and encephaloid, somewhat difficult, although, nevertheless, they interfere with or colour the skin. In the dead body we find them to be composed of colloid granules, and septa, or of a network made up of the detritus of the natural tissue, of putrelaginous matter, and

of masses which are still firm at some points, but softened and semi-fluid at others. Moreover, it has happened to me in following the evolution of these tumours, to recognise in a marked manner their gradual passage from the fibrous or hard form, to that of the most manifest colloid or fungus. I am also constrained to admit, that they, with the tumours called colloid, are but two different phases of the same species of cancer. I have most frequently observed them on the thigh and on the shoulder. I have also met with them in the breast, where I have noticed that they are so general, that the whole economy seems as it were inundated with them.

Nevertheless, what leads me to describe them apart, is, that in becoming generalised, they sometimes preserve their primitive physical characteristics to the last, whatever be the organ or tissue in which they are situated. The following cases show how such cancers progress in the midst of the organs, in the serous cavities, and particularly in the pleuræ.

Case I.—*Fibro-plastic tumour of the breast; extirpation; return; multiple tumours of the same kind in the visceral cavities.*—Poirrée, a woman, æt. 57, of good constitution, perceived, when she was thirty-four years old, a small, irregular, and hard tumour in the left breast. It rapidly developed itself, and soon became the seat of shooting pains, and was removed some time afterwards by M. Dubois. Eight years afterwards, the right breast in its turn became the seat of a similar tumour. In October, 1823, when the patient was admitted into the hospital des Cliniques, the tumour, the size of the fist, hard and painful, was adherent by the top of one of its lobules to the integuments, which appeared as if they were confounded with it. Extirpation was performed by M. Bougon, who removed at the same time almost the whole of the tissues of the mammary region. The tumour weighed more than two pounds. It was of a bluish white colour, very hard, homogeneous, creaking under the scalpel, lobulated, nowhere softened, and throughout surrounded with healthy tissues. At first, everything progressed favorably, and the wound had become reduced to three fourths of its original size, when lancinating pains supervened, and its surface assumed a violet or livid aspect. Other small tumours shortly appeared in the neighbourhood, some of which were extirpated, and some destroyed with arsenical paste; but new ones formed at

the side of the axilla. The general condition rapidly changed; many parts of the limbs became swollen and painful; diarrhœa was not long in making its appearance, to which was joined cough later on loss of voice, and then insensibility of the right arm; respiration grew shorter and shorter, and the unfortunate patient sank three months after the operation. After death, the external tumours—everywhere isolated, and surrounded with the healthy tissues, the lamellæ of which they separated without altering their texture—appeared like so many foreign bodies. Their substance was hard, lardaceous, and homogeneous; many of them adhered to the ribs, opposite to which was a tract which penetrated into the thorax. The right pleura contained an infinite number of similar tumours, the size of which varied from that of hemp seed to that of a hen's egg. They were pediculated, and suspended to the internal surface of the pleura by so many roots or threads, between the interval of which the serous surface appeared to be everywhere healthy, but its cavity contained stringy matter or a sort of reddish felt, into the midst of which many of these tumours extended. The left side of the abdomen was in the same condition, and contained similar tumours to those in the right pleura; and the same thing existed in the cavity of the mediastinum, and in the texture of the lungs. None of these tumours were softened either at the centre or in the periphery; they had all the aspect of what is called napiform tissue, or of chondroid tumours in a crude condition.

Does not this case, which I published in 1825,[1] belong to that which modern microscopists have described under the name of fibro-plastic tumours? and does it not conclusively show that fibro-plastic tissue really belongs to the class of cancers, and that, like scirrhus and encephaloid, it is susceptible of reproduction, not only in the same spots, but in the viscera, and in their containing cavities?

Case II.—*Fibro-plastic tumour of the breast; extirpation; return; numerous tumours of the same kind in the interior of the pleuræ.*—A female, æt. 50, was admitted into the hospital at Tours, in the year 1816, in consequence of a tumour which had existed in the right breast for about ten months. It was of the size of a child's head, nowhere ulcerated, and had grown without evi-

[1] 'Révue Médicale,' t. ii, p. 177.

dent cause. The patient was carefully examined by M. O. Gouraud, the principal surgeon of the hospital. The axilla was healthy; the general health appeared good; and there was nothing to lead to the suspicion of any visceral disease. The tumour, as well as a portion of the surrounding healthy structures, was therefore removed. At the end of the third week, there remained only about one third of the wound unhealed; but, in the midst of this, there arose a pyriform vegetation of a livid red colour. This was excised, but it returned of a larger size than before. Caustic was applied to it; but again it reappeared. Soon the cancerous cachexia manifested itself; there was cough, a sense of suffocation, and nausea; and two months after the operation, the unfortunate patient expired. At the inspection of the body, there were found upwards of 200 distinct, pediculated, hard tumours, the greater number being seated in the pleura, which was pale but not notably altered in character. The lungs also contained several similar tumours, and the liver appeared as if stuffed with them; the left pleura, also, contained some. No one of them was softened; their tissue was homogeneous, of a blueish-white colour, and their surfaces roughened; in size they varied between a hazel nut and a large chestnut.

It is difficult, I think, not to recognise in these tumours, which were all of the same consistence, whether examined in the pleuræ, the liver, or the lung, those characters to which, at the present day, the name fibro-plastic has been given. In fact, it is one of those circumstances which most attracted my attention at the commencement of my medical studies, and which has since induced me to maintain the opinion in common with M. Bretonneau, who made the observation at the post-mortem examination, that the cancerous tumour is a special variety which preserves its intimate characters, from the commencement to the termination, in whatever organ it may happen to be developed.[1]

[1] 'Révue Médicale, 1825, t. iii, p. 257.

[The tumours called by M. Lebert fibro-plastic, and better named by Mr. Paget, myeloid (μυελωδής, marrow-like), depend for their discrimination from cancers, entirely on their microscopical structure, and on the presence within them of many nucleated cells, like those of the fœtal marrow, and of the elongated fibro-plastic cells. The two cases quoted by M. Velpeau, being destitute of all microscopical detail, can evidently exercise no influence on the question one way or the other. If any opinion at all can be pronounced from the evidence before us, it would probably refer the tumours in question to the class of malignant fibrous growths, or perhaps of hard cancers.—Ed.]

§ 2. COLLOID CANCER.—Under the name of *colloid cancer,* I formerly described a species of tumour which seems since then to have been included in the class of enchondromata, by Müller; amidst osteophite tumours by some other pathologists; amidst napiform tumours by M. Cruveilhcir; and amidst fibro-plastric tumours by M. Lebert, &c.; all of which, however, appear in reality to be only shades of the preceding. In the limbs where this production is more particularly met with, it constitutes those enormous masses which give to the shoulder the aspect of a leg of mutton, which, in the haunch, acquire gigantic dimensions, and which often have for their points of departure the tissue of the bones or of the periosteum. Hard, in their first stage of the density of cartilage, irregular, lobulated, adherent to the skeleton, unconnected with the integuments, colloid tumours usually develop themselves very slowly, but sometimes, on the contrary, with great rapidity. At first globular, or pyriform in shape, they are not long, when they acquire some considerable size, in changing their consistence at certain parts. I have never seen them in the crude condition in the breast. In that situation they have presented a singular mixture. Some of their lobules being, in fact, as if cartilaginous or chondroid; whilst others were interspersed with septa, or with little calcareous partitions, as if of petrified tissue. Later on, we meet at the sides with homogeneous lobes of a brownish or blueish white, which, to the naked eye, have the aspect and the consistence of a more or less solid jelly. Elsewhere, their tissue is of a yellowish white, gummy to the touch, or as if caseous. In the midst of all this is a greater or less proportion of other bosses, which suggest the idea of medullary or encephaloid tissue; and a fibro-cellular network, easy to be recognised, unites the whole together by means of various septa, which are tolerably vascular in some parts, lardaceous or purely fibrous in others. The following is an instance of long standing, seeing that I published the case in the year 1826.

CASE III.—*Colloid tumour described by me, in the year* 1826, *under the name of colloid or hydatiform scirrhus.*[1]—A country woman, æt. 36, entered the hospital of the Faculty, on the 10th of May, 1826, having been affected for two years with a tumour, the size of the fist, in the left breast. Hard, slightly

[1] Arch. Gén. de Médecine, t. xii, p. 512.

lobular, and very exactly circumscribed, this tumour, which had been subjected to every variety of treatment, was nowhere fluctuating, and still continued to increase in size daily. There were no enlarged glands in the axilla, and the patient, moreover, enjoyed excellent health. The extirpation of the tumour was performed by M. Roux; four days afterwards the wound healed by the first intention, and on the 10th of June, the patient was well. I had occasion to see her again on the 10th of November, when she continued to enjoy excellent health. The morbid mass was shaped like a hemisphere, and contained a portion of unaltered mammary gland. Its anterior or convex surface could readily be separated from the skin. Its other surface was smooth and lined with a thickish layer of cellular or fatty tissue. There was no root or prolongation of the disease into the neighbouring parts. It was formed of lumps or lobules of various size, separated from each other, or united together by cellular connections, more or less distinct, more or less solid. Each of these lobules was made up of a semitransparent, blueish matter, which was homogeneous, and like fruit or meat jelly, whitish in colour, still very firm, and in some points not yet softened, but decomposed or broken down in others. At the present time I am as persuaded as I was then, that this tumour belonged to the category of colloid tumours, and that the gelatinous form of some of its lobules, was the index of a very advanced stage of the disease, in a tumour primarily adenoid in character. Moreover, I recognised the innocent nature of the disease; for, at the end of my observations, I added, "this form of disease seems to be susceptible of being distinguished from any other during life, and there is no proof that it will return when it has been wholly removed."

Pure colloid material exists as a primitive formation in other tumours, far removed in their other characters and physiognomy from cancer, if not in the breast, at least in other situations. A very conclusive example of the kind occurred in the hospital of La Charité in the year 1851. The tumour occupied the ham and internal half of the thigh, and had attained the size of an adult head. It was formed of an infinite number of masses separated from each other by complete and very thick divisions, and the material of which it was made up was throughout nothing but a genuine jelly, which could be enucleated from its different beds by means of the finger, and the consistence and

other physical attributes of which bore a great analogy to the colourless or yellowish fibrinous clots which, in many cases, fill the heart and the large vessels immediately after death. There was nowhere any material different from that just described: the microscope displayed no cancer-cells, but fibro-plastic elements and fusiform cells in abundance. Its substance throughout, at the centre and externally, was homogeneous, soft, structureless, gelatiniform, and precisely like the polypoid concretions of the heart. Such tumours must be as possible in the mamma as in the thigh, or elsewhere, and must always be considered as of special nature; they deserve in every respect the epithet of colloid, but there is evidently nothing cancerous in them; their entire physiognomy is so far removed from the tumours described above, that it would be strange not to separate them, even without the testimony of the microscope.

There is something extraordinary in the evolution and distribution of this gelatiniform matter. Thus, in the patient spoken of above, it existed alone, without admixture of any other material whatever, collected together in great masses, amidst the natural tissues, as if in so many cysts, divided from each other by septa of various thickness, and in the form of genuine deposits. The patient, a man, was cured by the operation, and has had no return of the disease. The details of the case have been published in another work.

I have never met with purely colloid matter alone, either in the testicle or in the breast. I have always seen it associated with lobules, lumps, and masses of altogether different aspect. In the same tumour it is met with, disseminated in bosses in varying proportion, in the midst of those encephaloid masses, that are best developed, or in depots, mixed up with the structures and débris of the primitive tissue. It is the same thing with certain adenoid tumours, in which, at an advanced period of their development, I have often seen distinct masses of colloid. In tumours of the limbs, as I have often observed, in the neighbourhood of the bones, in which it is sometimes met with in enormous quantities, this matter is almost always associated with lumps and lobules that are cartilaginous, or even osseous in density.

It is remarkable, also, that in the midst of these tumours, we meet with bone, often destroyed, broken up, and scattered here and there in the midst of the morbid growth, so as no longer to be recognisable. The osseous fragments which the scalpel de-

tects in the mass, are, however, scarcely more than integral particles of the chondroid or fibrous lumps of the tumour, and the collections of colloid matter seem themselves but like old softened or semi-liquefied bosses of the chondroid material properly so called.

Thus there exist, 1st, primary colloid tumours which the presence of cells or of fibro-plastic nuclei do not prevent from being innocent in character; 2d, secondary colloid tumours, which have their bases or origin either in an adenoid tumour; or, as is more common, in fibro-plastic cancer, the napiform or chondroid tissue of some writers.

The colloid material in itself, then, neither indicates absolutely the innocence nor the malignity of tumours composed of it. The *colloid condition* of cancerous tumours is generally nothing but an accident, the result of an advanced stage of the disease; but there are tumours formed from the commencement of colloid material, which are by no means cancerous, as may be seen in the preceding cases. In other words, it is necessary to distinguish amidst these tumours those which are entirely made up of colloid matter alone, from those which at the same time include different materials. Everything shows, in fact, that the first are not of a malignant nature, that they have no tendency to reproduction when they have been effectually extirpated, and that they should be removed from the category of cancers. In the second variety there is a sub-division to be made. In the breast, the association or conjunction of gelatinous masses with adenoid or purely fibrous tumours, does not by any means destroy their benignity, but allows of their being equally removed from the category of cancers. When, however, they are combined either with encephaloid or scirrhous structure, which, however, is very rarely impregnated with them or with chondroid or fibro-plastic tumours, properly so called, colloid tumours indicate or characterise a class of growths of very bad character, a species of exceedingly formidable cancers, although we may not meet in them either with the cancer-cell, or with anything resembling it.

In order, like M. Lebert, to believe that fibro-plastic cancers never become generalised, or reproduce themselves, except in their original locality, and are thus always a purely local malady, M. Maisonneuve,[1] must have speedily lost sight of his

[1] 'Leçons Cliniques,' &c., p. 28.

patients; for, as has been seen above, this species of cancer, on the contrary, returns with great obstinacy, both in its original situation in the neighbourhood, and throughout the whole economy. Moreover, the author of this proposition affirms, that up to the present time, six examples of fibro-plastic cancer, which had become generalised, have fallen under his notice.[1] To characterise such a disease, of a nature so manifestly malignant, by a cell or homologous element, similar to that of the natural fibrous tissue, or of the skin, or of an indurated chancre, or of structures thickened by inflammation, or of hypertrophied degenerated lymphatic glands, does not seem to me to be very reasonable. That there are in these tumours fusiform cells it is true, but the *specific* nature of the disease depends upon something else, upon an unknown something which is still to be discovered. The cancer, the colloid, matter being only a transitory form of the disease, cannot, in my opinion, be usefully preserved as a distinct species, and it must be admitted to be an innocent tumour when it shows itself from the commencement almost alone in the morbid product. Removed in this way from the group of malignant tumours, it becomes a new conquest to our diagnostic powers in favour of innocent tumours as against cancer, that implacable enemy of animal life. Never having met with pure chondroid or osteophite growth which could suggest the idea of cancer in the breast, it appears to me superfluous to dwell here on this species of disease. It is not altogether the same thing with keloid, about which I shall say a few words, after having pointed out epithelial cancer.[2]

[1] 'Gazette des Hôpitaux,' 1852, p. 596.

[2] There can be little doubt that M. Velpeau has here been speaking of a class of tumours widely different from such as, in this country, are usually denominated *colloid*, and there can be no better illustration than is thereby afforded to us of the inconvenience of naming morbid products from some outward resemblance, real or fancied, which they present to familiar objects. On the continent, and especially in Germany, the term colloid (κολλα, glue) has a much wider signification than in England, where it is usually restricted to what foreign pathologists denominate alveolar, gelatiniform, or gum cancer. Now from the description, it is probable, that M. Velpeau's cases were examples of softened cartilaginous tumours, or of medullary cancers with cartilaginous formations within them, such as not very uncommonly occur in the testicle, yet so far as the etymology of the term is concerned, they merit the epithet colloid equally as well as any other formation that has a glue or gum-like aspect. The English reader, on turning to the section headed "Colloid Cancer," will naturally expect to meet with a description of alveolar cancer; but will find that although the author gives the widest

V.—EPITHELIAL CANCER OR EPITHELIOMA.

Cancroid or epithelial cancer of the breast must be a rare disease, for I am not sure that I have ever met with it, and Hannover, who has made epithelioma in all organs the subject of study, also does not speak of it in the breast.[1] However, the melicerie tumour, of which I gave an account at p. 247, leads to the belief of the possibility of such a cancer occurring in the breast, although the mouth, the face, the neck of the uterus, and the integuments, are evidently its favorite locality. I shall only have to consider it in this respect when I come to the subject of the reproduction, and of the nature of cancer generally.[2]

VI.—KELOID.

The tissue of those tumours which were called keloid by Alibert, is remarkable. Holding in some sense a middle place between scirrhus and fibrous cancer, it contains neither cancerous nor any other juice. Its section is dry, slightly shining, of a reddish yellow, and perfectly homogeneous. It is rarely met with except in the skin, and it projects externally, and not towards the subjacent tissues. Sometimes in the form of plates of variable figure, oblong, lozenge shaped, flattened, or with angular circumferences, it often looks like a seam, the comb of a cock, or like a roll of hard, reddish or rosy dull yellow. I have seen it on the shoulder, back, side of the neck, forehead, and lips; on the

possible signification to the term, he says nothing of the disease to which, on this side the Channel, the epithet colloid is alone restricted.

I may take this opportunity of saying, that Mr. Sibley, the medical registrar to the Middlesex Hospital, after a laborious investigation, has arrived at the conclusion, that what are called colloid tumours in England, are destitute of malignancy and wholly distinct from cancers.—Ed.]

[1] 'On Epithelioma,' &c., Leipzig, 1852.

[2] Mr. Quekett informs me, that he has examined at least half a dozen examples of epithelioma in the mammary gland. In all the cases, the tumours were supposed to be cancers; but there were no enlarged glands in the vicinity. In one instance, a patient of my colleague Mr. de Morgan, the epithelial growth, curiously enough, occurred in the lung also. The appearances presented were, as if the milk ducts had become choked with epithelium, distended and burst, and as if subsequently the epithelium had continued to be secreted in enormous quantity.—Ed.

wrist, thigh, legs, and arms, but principally on the front of the chest. It has everywhere presented the same characters, that is to say, the appearance of a patch of cicatrix, reddish, smooth, of the density of fibro-cartilage, and indolent, projecting on the surface of the integuments, the thickness of which it does not seem to exceed.

Keloid usually has for its basis old degenerated cicatrices; and the cicatrices of burns appear to be more subject than any other to this disease. It would seem as though it were simply made up of cicatricial tissue, more and more thickened, at the same time that a marked hypertrophic process is proceeding under the influence of some special morbid action.

It must not, however, be supposed, that keloid never shows itself except in cicatrices. I have seen it on the chest, and in other situations, where it had not been preceded by any wound or solution of continuity. When once it has attained a certain degree of development, it commonly ceases to increase, and remains for an indefinite period as a simple deformity; and as usually it is not the seat of any pain, patients consider it as nothing more than as more or less lobulated, engorged projections from the surface of the skin.

Keloid is so accurately circumscribed, and the skin as well as the other tissues in the neighbourhood so completely preserve their healthy character, that, at first sight, one feels convinced that by shaving it off, or extirpating it, we shall obtain a radical cure; in fact, however, after removal, the new cicatrix in a short time almost always takes on the characters of the old keloid, so that at the end of a few months it forms a tumour larger and thicker than even the primary one.

What essentially characterises this species of tumour, and what separates it from true cancer, is, that it never reappears except in the cicatrix itself; that it never gives rise to similar tumours in the neighbourhood; never affects the glands or the lymphatic system; has no tendency to ulceration or to indefinite enlargement, and that, in a word, it seems to concentrate all its morbid energy on the spot in which it has arisen.[1]

[1] Respecting keloid tumours, it cannot be said that they have no tendency to ulcerate; I have seen them ulcerate, discharge the most offensive secretion, heal up, and ulcerate again. It must also be recollected, that many of the cicatrical tumours to which the name keloid is given, are genuine skin cancers, and, as such, affect the lymphatic glands, and run the usual course of epithelioma.—Ed.]

If the microscopists had been contented to apply solely to keloid what they remark respecting fibro-plastic tumours in general, that is to say, that it is a disease that returns only in its primary seat, and that it never becomes generalised, they would have confined themselves within the bounds of truth; but the most simple reflection, the slightest clinical examination, would always have sufficed to prevent their placing keloid, the true type of fibro-plastic tissue, in the same category as chondroid cancers.[1]

Still it does not form a species of disease the innocence of which can be positively affirmed. After being thoroughly extirpated and removed, even with a large extent of healthy tissue, it returns almost indefinitely. Without speaking of recurrences of this kind that I have seen in the lips, wrists, neck, &c., I may mention the case of a young lady, who consulted me upon several occasions for a keloid growth on the breast. This lady, who was of remarkable beauty, and had long formed the attraction of society in Paris, had, on the inner side of the right breast, a small tumour, like a large wart, which caused no suffering; but the existence of which, in that locality, greatly annoyed her. She had submitted to its removal by an experienced surgeon; the operation was trifling, the lips of the wound were brought together by a twisted suture; however, one month after the operation, the cicatrix far from growing paler, seemed, on the contrary, to become more red, more hard, and more projecting; in short, at the end of six months, the new tumour had acquired the dimensions and thickness of the finger, thus causing a greater degree of deformity than that for which the operation had been originally performed. More annoyed than ever, the patient had this inconvenient growth removed by another surgeon, who, fearing that the sutures employed in the first operation might have had something to do with the disease, allowed the wound on this occasion to cicatrize by the second intention. At first, all went on well. A regular and flattened cicatrix resulted at the end of a month, and the lady, as well as the surgeon, was enchanted with the result. Six weeks afterwards, the cicatrix commenced to thicken, to become red, and to assume the density of cartilage, and was not long in attaining the thickness and dimensions of the thumb. Travelling in Germany and Italy, she consulted the most distinguished practitioners of those countries, employed

[1] 'Gazette des Hôpitaux,' 1852, pp. 583, 596.

different varieties of treatment, and eventually returned to Paris, in a very unhappy condition. Hitherto, the tumour had increased in size by a third or a half after each operation; and it was at this period that I was consulted.

The keloid tumour occupied the internal and upper part of the right breast, so as exactly to stretch across the median line. Slightly ovoid, and rather larger at the base than at the summit, it was one inch and one fifth in length, one inch in breadth, and projected about two fifths of an inch on the surface of the part. Its colour was a pale rose, and its consistence like that of the most solid fibrous or lardaceous tissue. There was no lump on the top of it. Its exterior was soft and shining; it had ceased to grow for several months, but as the patient could not get accustomed to the idea of the deformity, and desired, for the third time, to be relieved of it, at any price. I performed the operation, with the concurrence of Dr. Piron, her usual attendant.

As the lady was tolerably stout, it was possible, notwithstanding the extent of the loss of substance, to keep the lips of the wound in contact, by means of three needles and the twisted suture. The breasts were suspended, and supported in front by a bandage, in order to prevent any traction on the cicatrix. Reunion proceeded properly, and for some weeks we had a regular, and, in appearance, a very supple cicatrix.

Delighted at her cure, which she, as well as myself, believed would, at last, be permanent, Madame L— left France, to pass the winter in Italy. Since then I have not seen her, but I know that her keloid tumour has returned, and that the poor lady has determined to have nothing more done to it, and to arrange her dress in such way that no indiscreet eye can perceive the deformity.

However, it seems, from what M. Bretonneau has recently informed me (September, 1853), that, either from the lapse of time or from the influence of a compressive plaster, the callosity or keloid growth has somewhat diminished during the last year or two. I extirpated from the neck of a young man, recommended to me by M. Légroux, a keloid tumour, which had also returned for the third time; and I could easily quote many similar examples.

VII.—CANCER OF ANOMALOUS KIND.

An affection of the breast, in the first instance of innocent appearance, but later in reality cancerous, and which I have only met with on one occasion, presented itself to me, in the hospital of La Charité, in 1852. The account of the case, which was taken by one of my pupils, M. Labbé, and which I requested M. Duménil, another pupil, to complete at the hospital St. Louis, where the patient retired to die, some months afterwards, will here serve for a description of the disease, and exhibit what was strange in the malady.

Case.—*Vascular affection occupying the whole of the left mammary region, with hypertrophy of the skin and subjacent tissues; difficulties of the diagnosis; subsequent growth of cancerous tumours.*—Frémy, æt. 58, was admitted into the hospital of La Charité on the 7th of July, 1852, and discharged on the 30th of September; admitted into the hospital of Saint Louis on the 20th of April, and died of pleurisy in May, 1853.

The disease had existed for about a year. It had commenced by separate livid spots, which by degrees became elevated to the touch, and then formed tubercles or little hard tumours, indolent, rounded, reddish in colour, and the size of grains of hemp seed. These tumours increased, sometimes one by one, sometimes by the addition of new patches, so as to form *plates*, with an uneven, rugged, mamillary aspect, with irregular borders. The plates had a transparent, vesicular appearance, but in reality were solid, and could be pierced by a needle without giving issue to any fluid. On their surface, the epidermis, much thinned, was cast off on the slightest injury; a thin serous discharge which followed, hardened, and formed yellowish crusts; at times there was merely simple desquamation; at others the epidermis was sound, and across it could be seen the varicose capillaries of the skin, which communicated to the skin a bluish shade, irregular in outline, and extending over a variable extent of surface. These varicose marks, which were not at all projecting, had a deeper tint than the tubercles, and appeared to form points of departure for separate or aggregated tumours: they always arose along the tracks of the varicose vessels, in which the bluish tint at this time disappeared. This was stated by the patient, and could also be ob-

served during the two months and a half that she remained in the hospital.

The disease commenced, at first, on the inner side, and afterwards appeared at the upper part of the mamma, and it was in this situation that the patches were thickest; they were more scattered inferiorly and externally; the nipple and areola, which had long continued sound, had, in their turn, for some days commenced to become covered with tubercles, in all respects resembling the first. This kind of erectile development, by degrees, thus extended to about two thirds of the extent of the part, here by isolated points, there by patches of greater or less extent.

The skin itself was hypertrophied, and, doubtless, also the subcutaneous cellular and adipose tissues, so that at the present time the mamma is quadrupled in size.

The affection had progressed slowly, without symptoms, and almost without the patient's knowledge. Her health in other respects was excellent, and she felt no other inconvenience from the disease than that arising from the size and weight of the mamma. At its commencement, the patient experienced a sensation of heat, which was so disagreeable that she made use of ice to alleviate it.

Hitherto the disease had continued local; but for about a month there had supervened œdema of the inferior extremities, especially on the left side: the appearance of this œdema coincided precisely with the development of little tumours, similar to those on the breast, below the left internal malleolus. These, however, disappeared without the formation of others elsewhere.

The patient had nursed three children, but had never suffered from inflammation of the breast.

April 20th, 1853.—At the hospital of Saint Louis.

Both breasts are affected, and the particular condition of the right is as follows:

The whole surface of the mamma represents a large patch, of violet-red colour, six inches in diameter, formed of vegetations of variable sizes, so closely connected, as to leave no intervals between them, or any appearance of healthy skin. The largest of these vegetations is about the size of a pea, and readily bleeds on slight irritation. Occasionally, also, blood escapes from it spontaneously, and it perpetually discharges a considerable quantity of thin, yellowish fluid, having an abominable odour.

In the centre of the disease, the nipple with its areola can be

detected in a retracted condition, hardened, of a dark red colour, and adherent to the subjacent tissues. Vegetations also grow from its surface, but they are smaller, project less, and are not so numerous as elsewhere. The circumference of the patch, accurately circumscribed, is indicated by a marked projection of the diseased parts upon the surface of the neighbouring skin. It rests on hardened tissues, which are completely adherent, so as to form one mass with it. The breast is but slightly prominent, destitute of lumps, or of any inequalities, except the projection of the vegetations with which it is covered. The alteration in the subcutaneous tissues does not seem to extend beyond the external vegetations, for the skin elsewhere retains its elasticity and mobility; examination fails to detect any induration or irregularity, nor does there appear to be any heightened sensibility.

Although the deeper structures were unaffected beyond the limits of the principal disease, it was not the same thing with the integuments. Here and there, in short, around the parts in which the degeneration was complete, there existed groups of vegetations similar to those already spoken of; the skin separating them from each other was in some parts sound, but in others covered by little varicose vessels; and there were even some slate-coloured marks, about two fifths of an inch in size, where blood appeared to have been effused. There were five or six groups of these vegetations at the upper part of the mamma, and two in the axilla. At the external side also, there were two of them isolated in the midst of a slate-coloured patch. There were several slightly erysipelatous patches in the neighbourhood, but no enlarged glands in the axilla.

The opposite breast of this patient had become affected during the last three months; but in an entirely different manner. The left breast has rapidly acquired a considerable volume, from the commencement of the disease; but the right, on the contrary, from the very first, had become retracted towards the centre. The nipple and its areola became depressed, at the same time that it grew harder. By degrees, the induration and retraction extended from the centre to the circumference; and at the present time, the disease involves not merely the whole mamma, but also the surrounding tissues, to a considerable extent, always following a very irregular line. The integuments, the subcutaneous cellular structure, the gland itself, and the deep-seated cellular tissue, form a single mass, completely immoveable, and intimately united to the

thoracic parietes. The skin is dull coloured, dry, withered, retracted, and of almost woody hardness. The nipple is, as it were, lost in the centre of the tumour. Pressure occasions no pain, nor is there any existing spontaneously, and no diseased axillary glands.

The general health is good, and, except that she is somewhat pale, the patient preserves a remarkable degree of stoutness. All the organic functions are performed regularly. She merely experiences from time to time painful sensations in the left side of the chest. Three weeks after her admission into the hospital of Saint Louis, she died of pleurisy.

Post-mortem examination. — Considerable effusion into the right pleura; and the left pleural cavity entirely obliterated by adhesions. In the liver, there were a dozen cancerous depots, the largest of which was as large as a chestnut, and projected on the upper surface of the organ. All the other viscera were sound. The left mammary gland was transformed into a yellowish lardaceous tissue, exhibiting several white bands. The pectoralis major had undergone the same species of degeneration in its interior. The tumour on the right side was also formed of a very hard tissue, which creaked under the scalpel.

A slice from the surface of the left mamma, which included the nipple, and another from the centre of the tumour on the right side, as well as one of the masses from the liver, were forwarded to M. Robin, who made a microscopical examination of them, and reported as follows:

1. *On the left side.* — The section presented a grey, semi-transparent aspect, exhibiting fibrous structure merely in those situations where it became insensibly confounded with the skin. A greyish, creamy juice, in short, cancer juice, flowed from it on pressure: this fluid, as well as the tissue, from which it was discharged, and that of the tubercles of the skin, presented the elements of cancer in their most characteristic form: 1st. Free, ovoid nuclei, usually from $0^{mm} \cdot 013$ to $0^{mm} \cdot 015$ in size, with one, and sometimes two yellow, brilliant-looking nucleoli of tolerably large size. 2d. Cancer-cells of very variable forms, all having a diameter from $0^{mm} \cdot 020$ to $0^{mm} \cdot 080$. All the cells enclosed one, two, and sometimes from three to six nuclei, similar to those that were free, and were proportionally more abundant than the free nuclei: the largest, and those with multiple nuclei, were met with especially in the elevations in the skin. The free nuclei,

and the cells, were bathed in a fluid containing molecular granules and fat-globules tolerably abundantly.

A slice on a level with the nipple exhibited a line of distinct demarcation between the cancerous tissue occupying the skin and the tissue which formed the milk-tubes, united by cellular structure. The cancerous structure was of a greyish-rose colour, and the tissue of the milk-tubes was greyish white and fibrous; on pressure, there flowed from the lower part of the section (in that position where the milk-tubes were continuous with the mammary tissue which we had separated from the unhealthy skin), portions of material having a whitish-yellow aspect, of the consistence of the matter from the sebaceous glands in epidermic tumours from the face and elsewhere. This matter evidently came from the milk-tubes. It was composed: 1st, of cells of pavement epithelium, more irregular and more granular than in the natural condition. There were also free nuclei somewhat more granular than usual. 2d. A very large quantity of molecular granules forming a larger mass than the sebaceous material, or than the epithelial cells themselves: some were greyish in colour, and many were fatty. Both the one and the other were frequently united together in little groups, the largest of which were as large as pus-globules, but easily distinguished from them by the irregularity of their form. Such was the composition of the morbid material in the milk-tubes, which, as has been shown, exhibited nothing heterologous.

2d. *On the right side.*—The mammary tissue was of considerable consistence: it was hard, impossible to be torn, and exhibited no trace of juice. Here and there, however, there issued from little orifices a material similar to cream. Under the microscope, also, it had precisely the composition of that fluid, that is to say, it contained: 1st, abundant globules of milk; 2d, masses of colostrum, exactly like what is found in the milk immediately after confinement. There were no cancer elements. The mammary structure itself exhibited absolutely nothing but fibrous tissue, and here and there mammary *cul-de-sacs* destitute of epithelium, but becoming visible only on the application of acetic acid to the *cellular tissue*.

3. *The Liver.*—The tubercles on the liver furnished little juice; but their tissue contained a considerable number of cancer-cells, with ovoid nuclei, each containing one or two yellow, brilliant nucleoli. There were also free nuclei similar to those

contained in the cells. It was not uncommon to find cells with two or even three nuclei. These ovoid nuclei, and their yellow, brilliant nucleoli, enabled the cancer-cells to be readily distinguished from the cells of hepatic epithelium mixed up with them, and which sometimes had the same dimensions; but all had a spherical nucleus, and were much more minutely granular.

As I know of no case similar to the preceding, I have given the history connected with it at length, and have not thought it right to shorten any of the pathological details, and microscopic examinations, so carefully instituted by M. Robin.

Its scientific value seems to me even greater than its clinical importance. In fact, the juice and the cell characteristic of cancer, were found only in the left mamma, which, notwithstanding, hardly presented the physiognomy of cancer. The right breast which, on the contrary, was cancerous in the highest degree, contained neither juice nor specific cell. The constituents of milk, which M. Robin met with in the midst of the scirrhus mass of the right mamma, also to some extent unveils the analogy which exists between the butyrous tumours, spoken of at p. 235, and cancer. I shall consequently have to return to this case in discussing the diagnosis and prognosis of malignant tumours.

CHAPTER II.

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis of cancer is necessary in many ways in practice. In the first place, it is necessary to prevent our confounding the different aspects or varieties of malignant tumours the one with the other; then we must have recourse to it also in order to distinguish cancer from innocent tumours, after we have studied their pathological anatomy.

I.—DIAGNOSIS OF THE DIFFERENT VARIETIES OF CANCER.

It is not easy to distinguish the varieties of cancer at the bedside of the patient, during their earlier periods, for it must be confessed that, at that time, the greater number of them resemble each other, or are confounded together. The practitioner, however, need not much regret this circumstance, since the final diagnosis is very easy, and there is then no necessity to ascertain exactly whether the case be of one form of cancer more than of another. At its commencement, the progress of cancer, on the contrary, differs, according as the case be of one form or of another, so that it is manifestly desirable to decide from the commencement, as to what variety of tumour we have to deal with in any particular case. Generally, it is easy to separate scirrhus from encephaloid. A mamma affected at once with ligneous or lardaceous hardness cannot be confounded with a globular, elastic, or fungous tumour, at any period of its development. Scirrhus is always hard; encephaloid always somewhat soft. Encephaloid gives the notion of bosses, which have a tendency to swell up, and to project in front, whilst in scirrhus, on the contrary, the integuments have a shrivelled and indurated appearance. Encephaloid distends, thins, reddens, and ulcerates the skin from within outwards; scirrhus affects the integuments by attracting them to itself, by thickening them, in the first instance, wrinkling them, and causing them to ulcerate apparently from without inwards. Ulcerated encephaloid is soon complicated with vegetations, fungous masses, soft mushroom-like growths, which are easily broken down. Scirrhus deepens, but has no vegetation on its disorganised surface, and remains hard at all points. At its commencement, scirrhus cannot be accurately distin-

guished from certain indurations and hypertrophic thickening of the normal tissue; but encephaloid, which always occurs under the form of masses more or less exactly rounded, can no more be confounded with scirrhus at this than at a later period. From these differences in their principal characters, it moreover follows, that one of these tumours rarely exceeds a certain size before ulcerating, and in some degree exhibiting a tendency to destroy itself, whilst the other may acquire an enormous size.

The distinction between encephaloid, and certain chondroid or colloid tumours is in truth a much more difficult matter; still, if we do not lose sight of the fact, that chondroid tumours are hard and deep-seated up to a very advanced period of their development; that they are almost constantly adherent to the skeleton at some point; that their hardness is generally analogous to that of cartilage, and occasionally suggests the idea of a somewhat softened exostosis; that they only invade and alter the skin at a late period; that if the tumour be of a colloid variety, and eventually ulcerate, there results no fungus, no mushroom, no medullary vegetations, no bleeding cavities, that, on the contrary, they deepen, so as sometimes to form vast caverns, we shall not confound them with encephaloid cancer, except from carelessness. The latter is represented from the first by a tumour, which is more or less lardaceous, always elastic, and frequently of fungous consistence; which usually remains moveable amidst the tissues; which by preference tends towards the integument, which rapidly attacks and involves the skin, which seems to ulcerate only in order to vegetate more freely and more largely in front. Thus, even at an extreme period of their evolution, it is still possible to distinguish these two forms of cancer.

Even supposing that the lobules of the chondroid tumour are softened or liquefied, that cysts filled with matters, either fatty, phymatoid, or hæmatic, or even purulent, are mixed together, the disease does not the less preserve its primary aspect; that is to say, its chondroid hardness, and the absence of fibrous or fibro-vascular structure; and on the other hand, in the most advanced encephaloid, the presence of chondroid or phymatoid lumps, or of bloody or serous cysts, does not prevent the medullary or fungous tissue from being quite recognisable by its vascular plexus, and by the purely lardaceous aspect of those portions of the tumour which have not yet softened. Still it must be admitted that certain tumours which are really chondroid or colloid may occasion us

much embarrassment; and I shall return to the subject in treating of the differential diagnosis of cancer and of innocent tumours.

The distinction between encephaloid and melanosis would at first sight appear easy: the black colour of the latter at once guards against any error; nevertheless as fungus hæmatodes, that is to say, medullary cancer with sanguineous infiltration or a sero-vascular plexus, is sometimes coloured black, although of encephaloid nature, it is possible to mistake for melanosis, a tumour which in other respects resembles cerebriform cancer properly so called. On the other hand, innocent tumours are sometimes infiltrated with pigmentary or carbonaceous matter, so that it may be possible to take for melanotic cancer, tumours of much more innocent nature. Melanotic cancer having its seat either in the substance of the skin or in the subcutaneous texture, generally presents itself in the shape of plates or pustules which have little tendency to ulcerate, or to form fungous masses, nevertheless, one nearly always succeeds, at whatever period of their development we observe them, in distinguishing them from encephaloid cancer, which is almost constantly situated at a certain depth under the form of a globular or rounded tumour, which rapidly vegetates, reddens the skin before ulcerating, and which usually swells up with great rapidity.

Keloid differs in too many characters from encephaloid cancer for it to be necessary for us to dwell on its differential diagnosis; it is rather with scirrhus that it presents some analogy. Still it differs from it in certain well-marked particulars. Besides that it scarcely ever occupies any other locality than the skin; that most frequently it is but a sort of altered cicatrix; that it always forms a circumscribed projection on the surface of the integuments; its substance also is less dry than that of scirrhus, it has a reddish and shining appearance, a regular and smooth aspect, and its section is absolutely homogeneous, destitute of morbid secretion, or of milky or cancerous juice.

Scirrhus, on the other hand, even when it attacks the integuments tends to depress or ulcerate the skin; presents a more unequal degree of firmness, and in all its varieties, moreover, furnishes a cancerous juice. Finally, keloid having no tendency to ulcerate, or to give rise to fresh growths in the neighbourhood, or to affect the lymphatic glands, or to interfere with the general health, is always easy to distinguish from the class of scirrhous cancers.

There yet remains the class of fibro-plastic tumours. Analogous to scirrhus in their consistence, they have more resemblance to encephaloid in their globular form, and in their apparent isolation in the midst of the tissues in which they have originated. Nevertheless, they differ from the first variety in the circumstance, that, increasing indefinitely, they raise up the skin and make it lobulated, without losing their consistence, in place of wrinkling, shrivelling, and furrowing it up, or drawing the integuments towards the interior, as is the case in scirrhus. In short, contrary to what occurs in schirrus, fibro-plastic productions are usually well circumscribed; destitute of radii, of roots, or of apparent continuity with the neighbouring organs. They are distinguished from encephaloid by their fibrous density, which long remains the same in all the lobules of the tumour, and by the circumstance that ulceration proceeds from their surface towards their base, like that of scirrhus, instead of progressing from their interior towards their exterior, so as to give rise to medullary mushrooms, and to fungous vegetations. It may be added, that fibro-plastic tumours contain neither milky nor cancerous juice, nor the specific cell of which I shall speak by and by.

If, I repeat, these differences enable us, in the first two stages of the disease, pretty easily to distinguish those principal forms of cancer which I have established, it is not altogether the same thing in the following stage: it would seem, in fact, that the further removed they are from their origin, the more these tumours tend to approach, and to become confounded with each other. It is thus that partial parenchymatous scirrhus often terminates by attacking the whole mamma, and by being no longer distinguished from scirrhus *en masse*, or in the open condition; lardaceous scirrhus, whether partial or *en masse*, also rarely fails to become ligneous in growing old. The one and the other sometimes become mixed up with each other in the long run, either with ligneous scirrhus, disseminated or in patches on the integuments, or as multiple tubercles.

Once ulcerated, scirrhus, whether atrophic, ligneous, or lardaceous, is often combined with tubercles, or lobules, of various colours, which more or less resemble the swellings of encephaloid, of colloid, or of fibro-plastic tumours. I have often seen scirrhus *en masse*, or lardaceous scirrhus, increase in this way like the ligneous variety, and become covered with fungous vegetations, which it would be difficult not to mistake for encephaloid.

In the course of their evolution, these different tumours have certain consequences in common; they all tend, for instance, to alter and destroy the surrounding tissues; and all of them have the characteristic of giving rise to glandular enlargements. Scirrhous cancers, like encephaloid, are, in fact, often complicated with secondary tumours, either under the external border of the pectoralis major, or in the cavity of the axilla. Somewhat later, the glands of the supraclavicular and cervical regions, are in their turn affected. Nevertheless, I admit that scirrhus in plates produces changes in the lymphatic system less rapidly than the others, and this system sometimes also, but not as is erroneously asserted by some modern microscopists, always, resists infection by chondroid and fibro-plastic tumours.[1]

II.—DIAGNOSIS FROM MICROSCOPICAL ANATOMY.

A long course of ages has elapsed since morbid anatomists occupied themselves with the subject of cancer. The ancient authors were attracted by the external characters of the tumour, and by what was appreciable at the bedside of the patient. Laennec was in reality the first, who, guided by the torch of analysis, ventured beyond this point: it was he who first showed that cancers are constituted by a peculiar tissue, and that all solid tumours of the breast are not cancers.[2] It was he who first maintained that, amidst cancers themselves, several varieties ought to be admitted;

[1 The whole subject of the differential diagnosis of cancers amongst themselves, and from innocent growths, is in a transition state. It seems due both to observers in this country, and on the Continent, to state that M. Velpeau's observations are clearly based upon an imperfect appreciation of the real differences that they have endeavoured to establish between fibro-plastic, myeloid, keloid, colloid, and cartilaginous growths, and the occurrence of cysts and cartilaginous and osseous products in the midst of genuine cancers. The lapse of a very short time will probably place the whole subject in a much clearer point of view. It is to be regretted, that M. Velpeau was not acquainted with Mr. Paget's 'Lectures on Surgical Pathology,' when he published his present views.—Ed.]

[2 Were this the place to do so it would not be difficult to show that this pretension is inadmissible. One part of Mr. Pearson's 'Practical Observations on Cancerous Complaints,' which appeared in the year 1792, is devoted to clearing up the diagnosis of cancer in that locality, and he lays down some very practical rules upon the subject. No one would desire to undervalue Laennec's writings in the 'Dict. des Sciences Medicales,' but to claim exclusively for him, a contemporary of Abernethy and Cooper, the merit of being the first to show "that all solid tumours of the breast are not cancers" is manifestly unreasonable.—Ed.]

that encephaloid and schirrus, for example, represented two varieties of cancer essentially different. This, however, was but a first step, the result of a first effort; and science as well as practice demanded something more complete.

During the last twenty-five or thirty years, we have entered into a new phase of this study. Abetting this impulse in the year 1826, and combating the doctrines of the time, I observed[1] that, "even if it were true that all degenerations or morbid productions were due to inflammation, surgeons would not the less be obliged to admit the different varieties described by modern pathological anatomists, as so many diseases of different natures. It is only those who give themselves up to the study of speculative medicine that can deny the importance of these distinctions; and we ourselves believe *that there still remains much to be accomplished* in this point of view. Thus, the ablation of hemorrhoidal tumours similar to those which we described above, and to those which will be pointed out hereafter,[2] are never followed by analogous productions in the viscera, whilst this unhappy reproduction almost constantly occurs after the extirpation of a cerebriform mass; and, amidst cancerous tumours themselves, it may be asked whether some are not *much more dangerous than others?* Is it not to these differences, sometimes so insignificant in appearance, that are due such opposite results occurring to practitioners equally well informed and equally trustworthy? Is it not in these shades of difference *that we find the explanation of that diversity of opinion which still prevails amongst surgeons, respecting the utility or the dangers of the ablation of these tumours, and the possibility or impossibility of their radical cure?*"

I was thus, even at that time, of opinion that the classification of cancers, and of tumours of the breast, required extensive modifications.

Since then, also, I have endeavoured to separate cancer from tumours which have neither its composition nor its malignity. In order to effect this, and to remove from the class of cancers, tumours of different nature, I have had recourse, either simultaneously or successively, to all possible modes of investigation; to chemistry, and to the microscope, at the same time as to clinical

[1] 'Archives Générales de Médecine,' vol. xii, p. 513.

[2] From an article devoted to the exposition of the different operations performed in the hospital of La Faculté, where I then filled the office of chef de clinique.

observation. If, hitherto, chemical analysis has remained almost fruitless in this respect, the same remark certainly does not apply to the microscope or to bedside observation. The observations which I published between the years 1823 and 1830, on changes in the blood, either from pus or from cancerous matter, led me to suppose that chemistry would discover in the altered fluids, materials different from those in the healthy state, and that possibly we might thus attain the power of distinguishing the elements of cancer in the blood. It seemed to me, on the other hand, that the microscope would not fail to recognise special molecules peculiar either to cancer, or to pus, or to some other morbid products, in the midst of the radical, material, and well-marked alterations, which the blood of patients affected with cancer sometimes presents, and of which I narrated some strange examples in the years 1824, 1825, 1826, 1827.[1]

I also strongly urged M. Donné, who, it must be admitted, was (for the last twenty years) the first to revive amongst us the importance of the microscope; and, subsequently, I renewed my solicitations to M. Mandl, to search in the blood for the elements of pus or of cancer, and of all diseases arising from infection.

I regretted at the time, and I still regret, that, on this subject, the researches of observers have remained as fruitless as those of the chemists. In fact, I at that time remarked, "that if the microscope enabled us to recognise in a drop of blood the elements of cancer, with which a patient might be infected, we might thus understand how the question of surgical operation, cleared up by this circumstance, would then be accepted or rejected absolutely."

In the mean time, we must thank microscopical observers for the exertions they have made in another direction, and for certain important results already attained by them. Their investigations have been directed to the intimate composition of tumours themselves. After much groping in the dark, and after oscillations which, perhaps, have not yet ceased, they have been enabled to demonstrate, in cancerous tumours, certain forms of cells, which are never, or at least rarely, formed elsewhere. In 1837, a young German inquirer, M. Gluge, at the present day a distinguished man in Belgium, devoted himself, under my inspection, and at my request, to researches which were not new to him, and

[1] 'Archives Générales de Médecine,' 1825.—'Revue Médicale,' 1825, vol. i, pp. 217—343; vol. ii, p. 177; vol. iii, p. 257, and May, 1827, &c.

which had already led him to the belief that the structure of cancer could, without much difficulty, be distinguished, by means of the microscope, from any other.

Since that period, all the learned in Germany have devoted themselves to the subject with extreme ardour; and literature at the present time possesses the researches of an infinite number of observers, amongst whom are especially distinguished M. Müller, M. Vogel, and, in the last place, M. Virchow.

In Paris, this new mode of investigation has been pursued for a dozen years, with unrivalled care, and with the most laudable perseverance, by M. Lebert, around whom are grouped M. Robin, M. Follin, M. Broca, M. Gaillet, and a crowd of other still younger but equally diligent observers. This, then, is the present position of science on this subject. I have intrusted the resumé of their observations to M. Follin, one of the most distinguished of my old pupils; and I shall presently state what must be thought upon this subject.

"Microscopical observation," says M. Follin, "has shown that the structure of cancer contains *nucleated cells;* free *nuclei* provided with *nucleoli;* and, lastly, an aggregation of granules which are known under the name of molecular granules. These different corpuscles, united together, or to other organic elements, in various proportions, make up the different forms of cancer.

"The *cells,* although of different aspects, have a common type, which gives to them the stamp of speciality. They are of very variable dimensions; the smallest are scarcely more than $0^{mm}{\cdot}007$ in size; but we often meet with some which are $0^{mm}{\cdot}060$ in size, and specimens of these very different dimensions may be met with in the same tumour. There is nothing absolute in their form; sometimes exactly circular, they are most usually irregularly rounded. They may be elongated, and may present caudate prolongations, which give them a special physiognomy. They are sometimes exactly circumscribed by a black line, which in some cases has seemed to have a double outline; but in others, the paleness of the cell prevents our recognising any distinct boundary; and it is only by varying the modes of illumination that we become assured of its existence. Finally, it may be impossible to distinguish in them a boundary wall and a cavity.

"The *nuclei* have always seemed to me to fill a very important place in the histology of cancer;—and if I might here express my full belief on this subject," says M. Follin, who holds the same

language as M. Broca,[1] "I should say that there may be cancer without cells, but never without nuclei. The abundance of the nuclei has often deceived beginners in microscopic observation, by causing them to take the corpuscles for certain varieties of epithelium, and thus to mistake cancerous tumours of the most characteristic kind. Remarkable from their regularity, their rounded and obscure boundary, their more or less regular form, rarely angular or elongated, these nuclei vary in size, and usually attain to a diameter of $0^{mm}{\cdot}01$.

"They are always of a deeper colour than the cell enclosing them, and are made up of obscure granulations compacted one against the other. This general formation makes them more visible than the cells; and they have also the property of remaining unchanged by acetic acid. When accumulated in great numbers in one tumour, they constitute a variety of cancer which may be called *nuclear cancer*."[2]

In these nuclei are found nucleoli. These globules of extreme tenuity, and which sometimes alone attain a considerable size, may nevertheless be entirely wanting. In general they are in number from 1, 2, 3, and 4, &c., and reflect the light like fatty matters; and some experiments made with ether, have in great measure convinced M. Follin of their fatty nature.

Outside the nucleus, between this body and the cell wall, we meet with a greater or less number of very small molecular granules; these granulations, forming the contents of the cell, are variable in number, colour, and in nature. In this way we meet with cancer-cells which are very transparent, and with others which are of a deeper colour; those which contain black granules belong to a particular form of cancer.

Such is the constitution of a typical cancer-cell, but by the side of the general fact we meet with exceptions. We meet occasionally with cells without apparent nuclei, and in this respect three varieties may present themselves; sometimes the nucleus is masked by molecular granulations, which acetic acid dissolves; sometimes it does not exist at all; and sometimes it is obliterated under the influence of some peculiar process going on in the cell. These morbid conditions of the cell are not rare, and M. Follin possesses drawings which prove this progressive degeneration of the nuclei. In the place of the disappeared nucleus, it is common enough to meet with oil globules.

[1] Op. cit., p. 476. [2] Broca, p. 476.

The number of the nuclei, moreover, is very variable. We usually meet with but two or three. M. Broca,[1] however, mentions having met with twenty in a single cell.

Some microscopists, M. Virchow especially, have called attention to these parent cells;[2] but this author seems to have mistaken for them large concentric cells of epithelium, or perhaps those which M. Courty[3] calls caudate cancer-cells, and which resemble flattened or withered epithelial cells.

Do cancer-cells undergo a successive development which alters their shape? Does a young cancer differ from an old cancer cell? Many microscopists have endeavoured to answer this question. M. Courty,[4] in particular, seems to have carefully followed the development of what he calls *embryonic cancer elements*, up to the condition of *caudate cancer-cells*. Simple nuclei, small and transparent cells, form, according to him, a portion of the first category, and we meet with them in tumours which have rapidly acquired a considerable size, and in certain tumours of the bones: in the second variety are to be placed some large thick cells, with irregular borders, the nuclei in which have in part lost their form, dimensions, and consistence, and which are not rare in certain varieties of long-standing cancers of the neck of the uterus.

All this proves, that in a drop of cancer juice, we may meet, in the midst of a common general physiognomy, with elements which in other respects are pretty various in character. In this way may be explained the remark of M. Vogel, "*The histological characters of cancerous tumour vary much, and very often they differ in the different portions of the cancer.*"[5]

Such, then, are the microscopical characters of cancer, according to the microscopists themselves. Let us now pass to the interpretation of these facts.

Do or do not cancers contain elements different from those we meet with in the organism in a state of health? German histologists, M. Müller, M. Vogel, and M. Virchow, seem to deny that they do. They admit that all the tissues are developed from certain primary cells, of which the normal elements of the organism are only secondary transformations. According to this doctrine, which is purely speculative, cancer is equally derived

[1] 'Mémoires de l'Acad.,' t. xv, p. 481.

[2] 'Die endogene Zellenbildung des Krebses,' von Virchow, 1851, vol. iii, p. 157.

[3] 'Comptes Rendus de la Clinique de Montpellier,' p. 155.

[4] Ibid., 1851, p. 125, on the relative malignity of various tumours.

[5] Vogel, p. 266.

from primary cells: the cancer-cells vary infinitely, and their differences depend in great measure on the degree of development which the primary cells have acquired.[1] M. Vogel also does not attach to the existence of the cancer-cell all the importance which others recognise in it. He admits the existence in cancer of an amorphous firm substance resembling coagulated fibrine, which contains molecular granulations, and this is the liquid cytoblastema of cancer. This substance becomes transformed into fibres, cells, &c., and in some rare cases it constitutes the predominant substance. We can then only succeed in recognising the nature of the disease by examining other portions of higher development, or indeed the diagnosis may be altogether impossible, for the amorphous and firm substance has nothing in it characteristic of cancer, and does not at all differ from the solid cytoblastema of other accidental productions.

M. Vogel, moreover, recognises in cancer molecular granulations and two sorts of cells. Of these the one may never, in the course of their evolution, pass beyond the condition of cells, and may be destroyed without ever having lost this form—*these are the cancer-cells properly so called*: the others may, in the course of their development, give rise to different tissues, and especially to fibres, consequently they assume the form of cell only transitionally—they are the *cells of development*.

Endeavouring to prove that cancer-cells vary infinitely from their primitive up to the most complicated forms, M. Vogel adds, that the name of cancer-cell cannot be applied to any definite form; that in examining a cell under the microscope, we cannot usually say whether or no it appertains to cancer; but that all uncertainty often ceases when we have masses of them under our eyes; and this depends on their diversity, and on the particular characters which belong to each of them.

The opinion of M. Vogel is an eclectic doctrine to which a great number of German microscopists give their adhesion. M. Virchow,[2] who rejects the results of microscopical admeasurements, holds that certain cells of epithelium resemble cancer-cells; that parent cells exist also in cartilage, that the cells of melanosis resemble those of the choroid pigment, "that cancer is not an *heterologous*

[1] Vogel, p. 267.

[2] Virchow, 'Zur Entwickelungs Geschichte des Krebses nebst Bemerkungen über Feltbilduug im thierischen Kœrper und pathologische Resorption,' von Reid, Virchow, 1847 (im 'Archiv. für pathologische, Anat. und Physiol. und für KlinischeMedicin,' p. 108.)

tissue, and that the thinnest portions of its substance are not essentially distinguished from those pervading tumours of innocent nature, or the primitive tissue of the embryo."

According to Dr. Hughes Bennett,[1] cancer of the mucous membranes, of the skin, and of the bones, is nothing more than an augmentation of the primitive structure, a genuine multiplication of the healthy organisation. The author thus finds himself compelled to admit a species of identity between the normal cells of the liver, and the microscopical characters of cancer of this organ. He says: "It is important to know that a young plastic epithelial cell, when isolated and viewed by itself, presents all the physical characters of a cancer-cell. This is especially the case when they have been lying some time in serum or other fluid, as often occurs with the cells lining the air-vesicles of the lungs, the ventricles of the brain, the mucous coat of the bladder, &c. When studied, however, in mass, nothing can be more easy than to distinguish them; they have a disposition to run together in groups, to adhere at their edges, and are of tolerably uniform size. Cancer-cells, on the other hand, never exhibit a tendency to run together in groups, but are for the most part separated by a greater or less quantity of molecular and granular matter, either disintegrated or aggregated together. They never adhere at their edges, and vary greatly in size."[2] It is thus easy to see that Dr. Bennett approaches the views of M. Vogel.

Nowhere has the specific nature of the cancer-cell been so authoritatively stated as in the works of M. Lebert,[3] who, criticising the objections of M. Vogel, M. Virchow, and Dr. Bennett, endeavours to show that neither of them can resist a rigorous examination of facts. Thus, says he, "the doctrine of primary cells is a fallacy of the German imagination. The metamorphosis of the pretended primitive cells has nothing to demonstrate or to justify it. Strictly speaking, material facts give no countenance to the anatomists of the school of M. Müller. It is under the influence of speculative notions that M. Vogel fancies he has seen in cancer two forms of cells, cancer-cells properly so called, and transitional cells."

"M. Virchow would lead us back to the infancy of the microscope, if, with him, we adopt the opinion that certain cells resemble

[1] 'On Cancerous and Cancroid Growths.'

[2] Op. cit., p. 449.

[3] 'Physiologie Pathologique, Traité pratique des maladies Cancereuses.'

cancer-cells; the flattened shape, the smallness of its nucleus, the angular irregularity of its boundaries, its size and so on, can never permit us to confound an epithetical cell with a cancer-cell.

According to M. Lebert, in short, "cancer contains a specific element, the cancer-cell, sometimes represented by a single nucleus, sometimes by a nucleus surrounded by its cell wall."

"Cancerous tumours may become infiltrated with fat, and take on the aspect of tubercle or of pigment, and then they are called melanotic; a gelatinous substance, enclosing scanty and delicate fibres, is sometimes united to the cancer-cells, some of which are single, and others parent-like or multiple. This addition of gelatinous substance, constitutes the colloid form of cancer. A thousand other elements may thus be added to cancer, and momentarily mask its appearance; but the microscope will always detect this characteristic element, the cell, of which the labours of MM. Robin, Broca, Hannover, Sédillot, and myself," says M. Follin, "have also established the specific nature."

Like M. Lebert, I am convinced that it is generally impossible to confound the cancer-cell with any other, when it is perfectly developed or unaltered; but it also seems to me, as to M. Virchow, that certain cells of epithelium, of pavement epithelium in particular, have, in some cases, a considerable resemblance to it; that the numerous alterations of its circumference, the variable number of its nucleoli, and of the granules which are infiltrated, or contained within it, may, in many instances, render confusion easy. Moreover, we cannot help coming to the conclusion, that different microscopists are far from agreeing as to the characters and the nature of this cell. The opinion of M. Vogel differs markedly from that of M. Lebert; and M. Virchow, on his side, does not hold the same language as M. Müller. In France even some differences are already perceptible between the views of M. Follin, M. Kuss, and M. Robin, for instance, and M. Lebert and M. Courty.

Scientific investigation is still too incomplete on this subject, the microscope is too difficult to manipulate, for phenomena all at once to strike the eyes of observers in the same manner.

The researches of M. Lebert are numerous, it is true, and throughout bear the stamp of great exactness. I have been witness of his exertions; a great number of the observations which he has published were made upon tumours which I had given him, and which were derived from my private and hospital practice.

According to him, there is no cancer without cancer-cells; there is no cell called cancerous, without entailing also the presence of genuine cancer. But I have often observed, in my public lectures, delivered since the year 1845, in the presence of the author, that it is impossible for me to admit this opinion in so positive a manner. I have met with tumours evidently cancerous, where it was impossible even for M. Lebert to recognise the existence of a specific cell. I may, in particular, quote the case of a young man, aged 17 years, upon whom I operated for sarcocele, at La Charité, in 1848. After its removal, I intrusted the tumour to M. Lebert, who examined it, and, nowhere finding in it the specific cell, came to the conclusion, contrary to my matured opinion, that the tumour was not cancerous. The patient, having recovered from the operation, returned home, but came back to the hospital at the expiration of a few months, with new tumours in his abdomen. He died very shortly after; and we found the abdomen filled with enormous, soft, medullary masses, of cerebriform aspect, and partly liquefied.

The cancer-cell, carefully looked for in these masses by M. Lebert, was no more to be found here than in the primary tumour; and the microscope could only justify itself, in the face of this fact, by refusing to the tumour the attributes of cancer, and by arranging it in the class of fibro-plastic productions.

In February, 1852, I removed from the breast of a woman a lardaceous scirrhus, presenting a mixture of encephaloid masses, and some phymatoid lumps, in which MM. Lebert, Follin, Robin, Broca, and Gaillet, could also nowhere discover the cancer-cell. Nevertheless, this tumour was truly a cancer.

Before the operation, as after dissection of the tumour, I pronounced it a lardaceous scirrhus of the worst kind; and, in dwelling on this fact in the lecture theatre, I did not hesitate, on the next day, notwithstanding the statements which were made to me by these microscopists, to affirm that the case was one of the varieties of cancer the most subject to return. It was not long, accordingly, before the patient, who recovered from her wound, perceived new tumours form around the cicatrix, and fell into the most complete cancerous cachexia.

Does not the example of anomalous cancer, related at p. 471, on its side, give an eloquent denial to the pretensions of the microscope; with its cells on the left side, where the disease was inno-

cent, and its want of cells on the right side, where the cancer was evident!

On the other hand, I have met with tumours which were positively innocent, which nevertheless contained the so-called cancer-cells. For example, a genuine adenoid tumour, which I removed in the year 1845, from the breast of the young lady whose history is narrated below, contained cancer-cells.

Case. — *Adenoid tumour; cancer-cells in a young lady of twenty-three; extirpation; radical cure.*—Mlle. M—, of the Quay de la Mégisserie, tall, rather thin, regular, and otherwise in good health, had laboured for several years under a small tumour in the left breast, for which I had been consulted some time previously. This tumour, which the patient attributed to the pressure of her stays, and which for three years had remained without increasing in size, had almost doubled during the last three months. Some shooting pain had latterly been felt, and this determined the patient again to seek my advice. Elastic, rather doughy, irregular, and of the shape and size of a large almond, the tumour seemed to move freely among the tissues, like a foreign body, and was situated five fourths of an inch above the nipple. I performed extirpation, with the aid of Dr. Pichon, the medical attendant of the family. The operation and its consequences presented nothing remarkable; and cicatrization was completed in the space of a month. Mlle. M— married a year after; has since had two children, and there has been no appearance of the tumour's returning.

Morbid anatomy.—In its consistence, as well as in its external aspect, and in its section, the tumour would have borne a strong resemblance to a large hypertrophied lymphatic gland, if it were not that it was rather paler, more granular, less easily crushed, and of fibrillar texture, apparently less homogeneous. Submitted to the examination of two distinguished microscopists, M. Follin and M. Lebert, they found it to contain, in certain quantity, the cells of cancer or of encephaloid. Whether their information was then less definite than it is now, or whether the cancer-cell may exist elsewhere than in cancer, it is equally true that no tumour ever seemed to me of more innocent nature, and that I persisted in my belief that it would not be reproduced.

A tumour simply hæmatic, which existed in the substance

of the superior maxilla of a young woman in the hospital, and which at no period, either before or after the operation, presented the slightest characteristic of cancer, was examined by M. Lebert, who found it filled with cancer-cells.

In 1851, I excised a portion of the os calcis, and heel of a young person, who had long laboured under caries with fungous degeneration of the tissues. In a clinical point of view, the disease bore no resemblance to cancer; nevertheless, M. Broca, who examined these fungous growths with the microscope, found them filled with the so-called cancer-cells. The patient recovered; his wounds cicatrized, and he is at the present moment perfectly well; and I do not hesitate to say, that the disease had nothing whatever about it that was cancerous.

It would, then, be imprudent, at least up to the present time, to acknowledge the cell, upon which so much stress is laid by microscopists, as the absolute characteristic of cancer.

In order to escape from this dilemma, it is now affirmed,[1] that it is not from scraps of the tumour, but rather from its totality, that it is possible to make a conclusive examination; and that, without this condition, the facts have no value whatever. The declared advocates of the cell never previously spoke of this difficulty; besides, when I gave them portions to examine, it was themselves who most commonly selected the pieces, when, indeed, they did not take the whole of the tumour; and thus, as far as I am concerned, this plea has no foundation.

One observation, moreover, has always arrested my attention, when it was necessary to take one side or the other on the subject of this cell. Constituting the fundamental element of cancer, it ought to be found in the blood of persons who are a prey to the general infection of cancer. Now, not only has no one ever been able to recognise its existence in the circulation, but its form and dimensions render its passage through the capillaries or pores of the vessels absolutely impossible. It has been objected truly, that, in order to its absorption, the organs and living tissues decompose it; that it is never taken up bodily, or in all its integrity; that, in one word, it enters into the mass of the blood only by means of its constituent elements, by its nuclei, its nucleoli, its granules, or its blastema. But, then, of two things, one—either its elements, its blastema proceed to reconstitute themselves in the midst of the circulating

[1] 'Gazette des Hôpitaux,' Jan. 1853.

fluid, and then, in some cases at least, we should meet with it here; or if it can only be reconstituted amidst the organs, after it has escaped from the vascular system, we are compelled to come to the conclusion, that, besides the cell, there are in the blood other cancerous elements.

MM. Lebert, Courty, and Broca,[1] indeed, consider the cancer-cell as a sort of morbid entity of peculiar nature, the existence of which presents several phases,[2] which, in some sense, has an infancy, an adult, and an old age; which may be in a normal condition, or altered, or unsound, or decomposed. They admit, also, that this cell requires a primitive blastema.[3] But then, whence comes this blastema if not from the blood, and how can that fluid engender the cancer-cell, if it be not previously cancerous itself?

I have seen in patients, in the body of a woman, amongst others, who, long after extirpation of a cancer of the breast, died of secondary disease, the large vessels, the aorta especially, and the abdominal vena cava, filled with thick matter similar to the matter of cancer. Partaking in a doubt raised at the time by M. Breschet, and M. Andral on this subject, M. Broca[4] considered it is true that these intra-vascular masses were nothing else than vegetations, or prolongations of the tumours from without. But, on the one hand, the morbid growth having been macerated in alcohol for several days was naturally much altered, when my colleagues made their examinations; and, on the other, their explanation at most applied merely to one of the masses of which I have spoken, since between several of these concretions and the external tumours there evidently was not the slightest continuity. It is therefore impossible to deny the existence of cancerous matter in the blood of this patient, a very detailed account of whose case I made public.[5] These morbid products, also, of which careful drawings were made, became the subject of an interesting discussion in the Academy of Medicine, in the year 1825.

In my opinion, the so-called cancer-cell, instead of being the element *sine qua non* of the disease, is only a secondary product; and we must have, beyond this, the knowledge of some more occult

[1] Op. cit., pp. 503, 504.
[2] 'Maladies Cancéreuses,' pp. 22, 229.
[3] 'Physiol. Pathol.' vol. ii, p. 257, et seq.
[4] Op. cit., p. 604.
[5] 'Remarkable Case of Cancerous Disease,' &c., 1825.

element, before scientific precision can be attained as to the nature of cancer.

When once it has accumulated in the substance of tumours, the cancer-cell seems destined to play a conspicuous part. We find it abundant, especially in encephaloid tumours, and proportionally so according as the cancer is more or less fungous; the cancer juice itself often contains a prodigious quantity, and the lumps of cerebriform matter are occasionally almost entirely composed of this singular cell. With a specific cell, there ought only to be one species of cancer; and this, in fact, is the doctrine that the microscopists are disposed to maintain. Nevertheless, it is a questionable fact, which seems susceptible of discussion; on the one hand, it is not admitted by M. Bérard,[1] and, on the other, it seems also to be left in doubt by M. Courty.[2]

It is true that the cancer-cell, that the cancerous juice, milky or creamy, is met with in encephaloid, as well as in scirrhus, where in reality it differs only in respect to its proportions; it is also true, that in all forms of scirrhus, there is fatty matter, fibro-cellular tissue and vessels, as in encephaloid cancer; but it does not follow from this that these two kinds of tumours are only shades of each other; simple varieties, or different phases of the same disease. We never see, perhaps such a thing never has been seen, as a well-marked stony cancer become an encephaloid tumour, in place of remaining stony from its commencement, until its complete destruction, until the death of the patient; neither have I ever seen encephaloid cancer, when perfectly formed, take on the characters of scirrhus at any period of its growth. A genuine schirrous and a well-marked encephaloid tumour have, from their commencement to their termination, so little resemblance, that it is difficult not to admit marked differences between the two kinds of tumours. We see, it is true, in some cases, scirrhus and encephaloid associated, mixed up together, either in the same tumour, or in the same individual in different situations; but even then, each tumour preserves the greater number of its distinctive characteristics.

Is it not true, moreover, that, with scarcely any exceptions, each of these two tumours gives rise only to similar ones? Scirrhus, for instance, will be followed by scirrhous tumours in the neighbourhood, and even in the viscera should the disease become generalised. If the difference between them rested entirely in the

[1] 'Dictionary,' &c., vol. vi, p. 270. [2] Page 90.

circumstance of the greater abundance of cells or of solid tissues, why have the secondary tumours of the liver, of the lungs, of the heart, of the muscles, of the thyroid body, all the same lardaceous, or woody, or chondroid hardness in organs of such different textures?—from this circumstance only, that the disease commenced in scirrhus. Why, on the other hand, does generalised encephaloid, in whatever situation we meet with it, present itself only in the shape of encephaloid masses?

A female operated on for cancer of the breast, died with hundreds of scirrhous chondroid tumours on the surface of the pleuræ (pp. 369, 370, Cases I and II): in Count G—, who had melanosis of the orbit (p. 367), nothing but melanotic tumours were found throughout, as well on the external surface as in the substance of the viscera. All the organs, all the tissues, the liver, lungs, heart, brain, thyroid body and muscles, were sown with little scirrhous masses in a female, who was at the same time affected with intravascular cancer, and all this arose from the circumstance that this patient had in the first instance an external scirrhus. This proves, moreover, contrary to the opinion of Scarpa,[1] that the glands and the integuments are not alone subject to scirrhus, as other cases have shown to me that encephaloid may commence in the first instance on the free surface of the serous membranes.

In studying the different forms of cancer, it may be that the transition of one into the other seems insensible. From stony to lardaceous scirrhus, from lardaceous to chondroid cancer, from chondroid to fibro-plastic cancer, from fibro-plastic tumours to lardaceous encephaloid cancer, from the latter to fungous encephaloid, from encephaloid fungus to colloid cancer, there is not, I must admit, a wide step, and the line of demarcation is not always very evident. But this does not interfere with the fact, that genuine encephaloid cancer perfectly formed, and well-marked scirrhus, are two varieties which ought to be kept separate. To maintain the contrary, seems to me as illogical as to deny that man forms a distinct species, because following the degradation of species we arrive at last at specimens which hardly differ from the ourang-outang or chimpanzee, and meet at last with monkeys which resemble certain men!

Cancer results from a morbid exudation. This exudation, which is well marked, and I believe incontestable, in cases of encephaloid cancer, in cartilaginous cancer, and in fibro-plastic cancer, is less

[1] P. H. Bérard, 'Dictionnaire de Médecine,' p. 288.

manifest, but still pretty well marked, in the greater number of cases of scirrhus. It is derived from the fluids of the system, and seems to occur in two different forms; in the form of deposit and in that of infiltration.

It exists in cerebriform cancer, in the form of deposit, to such a degree, that entire masses of the tumour sometimes do not contain any trace of normal tissue, or at any rate the natural elements of the organ are so unravelled, spread out or rarefied, that we can hardly find any traces of them. Besides these accumulations, sometimes to an enormous extent in tumours of the breast, or in some sorts of cysts, or enclosed in regular septa, I have seen them form, under my own observation, like effusions of blood in the serous cavities: for instance, in the glenoid cavity.

In a young person from the Havannah, whose arm I was obliged to disarticulate in consequence of an enormous encephaloid tumour, and in whom it was impossible to bring about the immediate union of the wound, there occurred at the end of three weeks so abundant an exudation of cerebriform matter, that in less than ten days the glenoid cavity was completely filled with it as high as the acromion. The encephaloid masses were there without any firm texture, and so entirely deprived of vascular connections, that I removed them on three or four different occasions, at intervals of a few days, by means of the fingers alone, without occasioning the slightest pain or loss of blood, just as if they had been simple clots, and without the glenoid cavity or the arch of the acromion having contracted the least organic adhesion to these singular deposits.

Without always being so manifest, the exudation of cancerous matter in the form of deposit in the very substance of the tissues has not seemed to me to be less incontestible in the greater number of cerebriform cancers. In February, 1852, a cancerous testicle, which I removed, with the concurrence of MM. Demarquay and Laurès, presented a remarkable example of this: the whole tumour was composed of brownish masses of a maroon or puce colour, of the size of large hazel nuts: they were pretty firm, and yet of fungous aspect, and were enclosed in large and numerous vacuities formed by the structure of the testicle. It is evident that the accumulation of heteromorphous matters scattered amongst the tissues of the organ like so many foreign bodies, had separated the substance of the part so as to form little cysts.

The microscope, moreover, showed what simple inspection did not permit us to discover, that the whole tumour contained a large proportion of cancer-cells. It is in this way that cerebriform cancer, and even fibro-plastic cancer, seem to become established everywhere, in the mamma as well as elsewhere. It also often happens that encephaloid tumours have the appearance of being encysted; that they are moveable, as if rolling in the midst of the organs, both when solid and when softened. It is said, that the blastema, the cancerous elements effused amongst the organic strata at first form a nucleus which afterwards increases by the addition of fresh analogous exudations, in an undefined way. These accumulations are always far from leaving the neighbouring tissues unaffected; most frequently, on the contrary, the different layers, the cellular, fibrous, and vascular structures become so much infiltrated as to be lost, and no longer recognisable in the midst of the cancerous formation. It is in consequence of this infiltration that encephaloid tumours are almost always complex in composition, and that we find in them, at an advanced period, the healthy tissues simply thickened, the organic strata as if fused together with the cancerous matter, and lumps or depôts of exuded material, almost in its pure state. It is no doubt in consequence of this, also, that encephaloid cancer so often presents, in the same tumour, colloid, phymatoid, fibrinous, or bloody masses, at the same time as lumps of genuine cerebriform matter, and that these different accumulations exhibit so great a diversity of consistence in the same cancer.

In scirrhus, everything indicates a different construction. It must, indeed, be admitted, that in this form of cancer the heteromorphous material is also furnished from the blood by a sort of exudation. Nevertheless, scirrhus never gives the idea of *a deposit*, of an *effused material*. At most it suggests the notion of a very fine diffused infiltration of the cancerous substance: in one word, it is here that we can entertain the notion of a transformation of tissue rather than of a veritable production of new matter.

I fear that on this subject modern pathologists, who deny the possibility of transformation in tumours, have attached more importance to the word than to the thing itself. The healthy tissues, I am aware, are insusceptible of mutual conversion. Muscular tissue never becomes nervous tissue, a bone cannot become transformed into a gland; but if it be true that all

organs have a common groundwork, that muscular fibre results from a special deposition of the fleshy element in the midst of the cellular tissue, and that the same reasoning holds with respect to the nervous, osseous, and glandular tissues, how can it be illogical to admit of a combination by intimate infiltration of the cancerous blastema with the natural tissues; and why in such a case can we not affirm that cancer is a transformation of a diseased organ, and, in short, make use of the expression *cancer by transformation?*

When we attentively examine scirrhus, we find the cancerous element and the natural tissues so intimately blended together, so completely identified, that it is impossible to draw the slightest line of demarcation between them. The mamma and its constituent elements, at first supple all around, become by degrees harder and harder on the approach of the tumour, in which they are shortly lost altogether, into which they penetrate, and to the formation of which they evidently contribute. Take one of the radii and one of the septa which emerge from the periphery of the cancer, and see whether their hardness, their insensible diminution, does not permit of our comparing them to the layers of the primitive tissues, simply hypertrophied in consequence of some inflammatory action. Is it not that in certain forms of scirrhus, in ramous scirrhus in particular, the disease does really commence by induration, by a sort of transformation of the cellulo-fibrous septa of the mamma? Is it possible to deny, that in that form of stony scirrhus which affects large portions of the skin at once without previous thickening of this membrane, we have an example of the formation of cancer by transformation? Is it possible that scirrhus *en masse*, especially that kind of stony scirrhus which in a few days involves the whole of one, and even sometimes the whole of both mammæ, so as to harden and pucker them, can be anything else than cancer by transformation.

By this doubtless it is not meant to say, that scirrhus is not due to the existence of some new material amidst the tissues; but it signifies that here the cancerous matter is limited to the fusion of the healthy structures, so as in some way or other to combine with and appropriate, and then to destroy them, molecule by molecule, at the same time that itself becomes substituted for them.

M. Lebert, it seems to me, is mistaken in asserting that stony

cancer is rich in fibrous tissue of new formation. The solid groundwork which we notice in it is so evidently continuous with the natural tissues, that I am unable to recognise in it anything else than a sort of skeleton of the primitive tissue clothed with the new matter. One remarkable circumstance in this form of cancer, is the tendency of the tumour to indurate, *to contract*, to double upon itself so as to become atrophied, and to cause all the lamellæ which are attacked by the disease to disappear by concentric pressure.

At any rate it is certain that, between stony cancer, for instance, and fungous encephaloid, there exists an enormous difference both with respect to the arrangement and to the physical properties of the cancerous matter. In this aspect, then, scirrhus is truly cancer by transformation, cancer from diffuse infiltration and condensation of the cancerous material; whilst, on the other hand, encephaloid is a cancer from effusion, a cancer with accumulation of the same substance in the form of simple or disseminated depositions.

As for napiform or chondroid tumours, although the cancer-cell has never been seen in them, they do not the less constitute a species of cancer, a tumour of new formation without analogy in the economy. M. Courty,[1] who also inclines to this opinion, and who has never met, in the tumours of which I speak, either with complete cancer-cells, or with fibres, or with fusiform bodies, states, however, that he has met with nuclei, or what he calls embryonic cancer-cells.

Keloid, on the contrary, is a genuine transformation of tissue, for the new molecules which constitute its speciality are perfectly combined with the natural or cicatricial fibrous tissue which has given rise to them.

In chondroid, as well as in colloid cancer, the morbid material is evidently a sort of deposition, instead of these tumours originating by transformation; and the same observation might be made of the phymatoid, hæmatoid, or even melanotic, or pigmentary substances.

It follows from these details, that if cancer form a single pathological species in respect to its intimate nature, we are not on that account justified in asserting that encephaloid, scirrhus, or melanosis, are merely simple varieties of the same disease.

Thus, like myself, M. Courty[2] has observed that the scirrhous

[1] Page 134. [2] Op. cit., p. 91.

form does not absolutely depend on the presence or on the absence of fibrous tissue in the cancer. What has been stated by M. Broca, in his magnificent work, has by no means convinced me that the consistence, size, and colour of scirrhus depend solely on the various proportions of the cells or cancerous nuclei in the tumour, or on the more or less intimate admixture of these corpuscles with the blood, with the gelatinous matter, with the fat-globules accumulated in the same spot or in the same tissue; and he is also evidently mistaken when he denies the cancerous nature of certain fibro-plastic and cancroid tumours.

In short, and in order to be correct in a clinical point of view especially, we must admit into the domain of science an encephaloid, a scirrhous, a chondroid, a melanotic, and an epithelial cancer.

All forms of cancerous tumours can readily be classified amongst these five species; and it is hardly possible to contest the value of the distinctions which exist amongst them. If, moreover, we desire absolutely to establish that all cancers are fundamentally the same, it at any rate is incumbent on us no longer to separate from them chondroid or epithelial tumours; for cancroid, for instance, does not differ more on dissection, or at the bedside of the patient from certain encephaloid tumours, than these latter differ from scirrhus.

It has never seemed to me possible that an homologous cell, that an epithelial cell, which makes up so large a proportion of the healthy tissues, which constitutes the epidermis, the structure of warts, and of corns on the feet especially, can be the fundamental specific element of any kind of cancer, or of tumours so incontestably malignant, as those which are called cancroid; thus, M. Lebert,[1] and after him MM. Sédillot and Marchal de Calvi, &c., who have well felt this, at first desired to withdraw these tumours from the class of cancers, in order to make them out to be tumours of almost innocent nature, readily curable by operation, which never return, or which, at any rate, never return except in the same situation. I am surprised that such practitioners as MM. Maisonneuve[2] and Michon,[3] have allowed themselves to adopt this view; for, epithelial cancer is, in truth, one of those which returns with the greatest obstinacy,

[1] Académie des Sciences, 'Comptes Rendus.'

[2] 'Leçons Cliniques,' p. 1628.

[3] 'Gazette des Hôpitaux,' Jan., 1853.

both at its original seat and in the neighbourhood, and even far distant.

III.—DIFFERENTIAL DIAGNOSIS BETWEEN CANCER AND INNOCENT TUMOURS.

The details into which I have already entered, have shown the greater number of the differences which exist between cancer and any other disease; but it is of so much importance not to confound innocent with malignant tumours, that I shall be pardoned for returning for a moment to the question of their comparative diagnosis.

§ 1. TRANSFORMATION OF TUMOURS.—If it were shown that cancer were only the ultimate stage, the transformation of tumours originally innocent, a more minute examination, a more extended semiology would be useless; but as has already been seen, if the possibility of certain transformations cannot be denied, it is at any rate incontestable that they are rare.

When speaking of *degeneration* as applicable to cancer, I simply desired to show that certain forms of the disease depended more on a transformation of the natural tissues than on the creation of new. In this point of view, scirrhus would, as has already been observed, be a cancer from degeneration or infiltration of the tissues, whilst encephaloid, would be a cancer from substitution, from deposition, or effusion of the same substance.

We are now discussing another kind of transformation, the transformation of different kinds of tumour amongst each other.

Can scirrhus become encephaloid, and *vice versâ?* Is napiform cancer when softened, capable of assuming the characters of cerebriform disease? Or is it not rather, as has been said, encephaloid tissue in a crude condition? If one were compelled to make a choice between these two opinions, I should rather incline to this mode of viewing the question than to the other; for, in my opinion, it is not doubtful that many tumours of encephaloid nature, are primarily hard and lardaceous, almost like fibro-plastic tissue; and that the lumps, the masses of which they are composed, often terminate by softening, and assuming a fungous aspect as they grow older.

The pultaceous or putrilaginous softening of these tumours is in truth only an accident of their evolution, the result of an

occult process, which goes on in their parenchyma, and tends to destroy them, on the one hand, whilst, on the other, they are increasing and extending.

It is the same thing with effusions and infiltrations of blood, which appear in the form of apoplectic clots, or of ecchymoses or even of genuine fluid hæmatoceles; it is also the same with those serous, reddish coloured or purulent collections, which are occasionally met with; however, these different changes may be considered as alterations, as diseases of the tumour, and by no means as the necessary results of its evolution and natural progress.

If we entertain the idea that every chronic tumour of the breast may become cancerous, we may include them all in the same anathema, and need not lay much stress on the distinctions between them. We find, indeed, but little in authors who wrote previously to my first researches, respecting the characters which enable a surgeon to say, this tumour is a cancer or will become one; that tumour has nothing cancerous about it, and there is no danger of its becoming so. Persuaded that this distinction is possible, I have for five and twenty years incessantly laboured to remove from the category of cancers different tumours which do not belong to it. In order to detach from it certain varieties of hypertrophic or inflammatory engorgements, I was compelled day by day to struggle, in my lectures, and at the sittings of the Academy, from 1830 to 1847, against the doctrines of Lisfranc, who always maintained, as was generally done before the time of Laennec,[1] that every tumour of the breast leads to cancer. In the present day we no longer maintain, with Récamier,[2] that an engorgement becomes first a scirrhus, and then an encephaloid: we no longer admit with M. Gerdy,[3] that scirrhous and encephaloid tumours are by no means cancers: nor with MM. Roux[4] or Blandin,[5] that fibrous tumours may degenerate into cancer, and that a blow may suffice to transform into cancer a tumour, which until that time had remained innocent: no one of the present race of young surgeons can be at a loss to defend himself against such doctrines; but having obtained this first result, we must look for another.

[1] 'Bulletin de l'Académie de Méd.,' vol. ix, p. 452.
[2] 'Traitement du Cancer,' vol. i, p. 438.
[3] 'Bulletin de l'Académie,' vol. ix, p. 559.
[4] Ibid., p. 392.
[5] Ibid., p. 354.

§ 2. ADENOID TUMOURS.—Having remarked that certain tumours remain stationary for an indefinite length of time, or with such innocent characters that the patients need not feel anxious about them; reasoning also on the transformations which effused, infiltrated, or accumulated blood undergoes in the tissues, transformations which other secreted liquids or materials likewise undergo, such as plastic lymph, false membranes, the different concretions, &c., I paused for a moment on the subject of tumours made up of some of these deposits. Hence originated the name of fibrinous tumours, under which I described them in the year 1839.[1] The proportion of these tumours having increased according as I was enabled to study them more correctly, the number of cancerous tumours has decreased in the same degree. As, however, the name of fibrous tumours may give rise to false interpretations, I have substituted for it the term adenoid, which prejudges nothing, which adapts itself to all varieties of innocent tumours formerly confounded together with true cancers. It is, I am aware, a name which only applies to their form. If the intimate nature of each tumour were perfectly known, it would no doubt be better to name them from their structure, than from their appearance; but in spite of the efforts of modern microscopists, science is yet far from having attained this point, and I do not believe it yet possible to name tumours in general, and tumours of the mamma in particular, after their microscopical structure, as has been attempted by M. Lebert in his last work.

The tumours of the breast which I have endeavoured to isolate from cancer, have, in truth, such well-marked characters, that it is almost always possible to diagnose them with precision. At the present day, it is rare that, at the hospital, I feel any hesitation respecting the differences between them, or that I do not establish their diagnosis and existence with as much certainty as though the case were one of abscess. I may also be permitted to add, that it has rarely happened to me to be deceived, when I have bestowed the requisite degree of attention on the case. In affirming this fact, of which, for twenty years past, many thousands of pupils and of young medical men have been witnesses, I simply desire to show that, contrary to what was said at the Academy of Medicine, in 1844, by Blandin, Lisfranc,

[1] 'Dict. de Méd.,' vol. xix, p. 76.

Roux, and some others, adenoid or innocent tumours are generally easily distinguished, and that, by persons who are *au courant* with the subject, these tumours can only be confounded with real cancer, in very occasional cases.

Elastic, supple, moveable, and rolling under the finger on pressure, destitute of any continuity with the tissue of the breast in which they have arisen, almost always due to some external violence, they often become developed only with extreme slowness, and are scarcely ever complicated with glandular enlargement. Whatever be their date, their form, or their size, whether they soften or degenerate into abscess, progress rapidly or slowly, they do not the less maintain their special characteristics to the very end; whether they be associated or not with pain, whether they ulcerate or remain intact, or whether they destroy or spare the skin.

Encephaloid which bears some resemblance to them, and with which they have most frequently been confounded, is attended with very different characters. Although globular, and sometimes pretty firm from the commencement, it even then is continuous with the neighbouring tissues; in displacing it and examining its degree of mobility, one soon finds that it drags with it the tissues, as if they formed an integral part of it, instead of simply moving about amongst them. Moreover, becoming developed with a certain degree of rapidity, the tumour scarcely ever remains for entire years in a stationary condition. Its increase in size almost always takes place towards the integuments. It seems as if it were necessary for it to make its way to the outside, so as to involve the skin, which soon becomes red, and is not long before it is confounded with it; whilst an adenoid tumour remains in the midst of the normal tissues, and does not appear to have any marked tendency, as it increases, to hang to one side more than to another.

Encephaloid, moreover, is so often complicated with cancerous glands underneath the pectoralis major muscle, in the axilla, or elsewhere, that we here have another distinctive character of great importance. When softened, it usually presents the appearance of bosses, the fluctuation of which, although deceptive, is sometimes so manifest, that it requires great experience not to be taken in; in certain cases even, it is totally impossible to say positively what it is, before having made an exploratory puncture into the tumour. In adenoid tumours, besides the antecedents,

which we should never lose sight of, there is further this difference, that the bosses and cysts form only isolated points, around which the tumour preserves all its density and elasticity. Encephaloid scarcely ever approaches the neighbourhood of the skin without destroying it. An adenoid tumour may attain large dimensions, all the time remaining free beneath the integuments, which it often thins to an extreme degree without destroying the normal tissues. In ulcerating, encephaloid sprouts up in fungous mushroom-like masses, which tend to soften more and more, which readily become putrilaginous and broken down: whilst ulcerated adenoid tumours remained hard and elastic, bleed but little, have no tendency to be destroyed, or to become detached, and preserve a greyish tint even when they become fungous.

Consequently, at no period of their evolution, can encephaloid cancer and an adenoid tumour be confounded together by an experienced practitioner. If M. Bérard[1] had attended to the preceding observations, he would not have mistaken for a mammary hypertrophy the enormous encephaloid cancer, which he removed at Versailles, from a lady twenty-five years of age; nor would he, somewhat later, have maintained that it is impossible to distinguish fibrous or chronic mammary tumours from cancer.[2] All forms of scirrhus are equally susceptible of being distinguished from adenoid tumours. At first, scirrhus even more than encephaloid is always confounded with the tissues or the constituent parts of the affected organ. A genuine scirrhus has never been seen to roll or to glide amongst the organized structures which surround, or are in the neighbourhood of it. On exploration, we learn that it forms a part of the diseased organ, of which it is simply a hardened, more developed or altered portion; as it grows older, scirrhus still maintains this character, or increasing in size, it seems to invade the tissues, and to involve the organs themselves; whilst adenoid tumours simply separate, spread out, or unravel them, so as to form a hole or place for themselves like foreign bodies.

The independence, the mobility, the want of continuity of an adenoid tumour with the neighbouring tissues, form such important diagnostic signs, that they alone will often suffice to distinguish them from any other tumour of the breast; and we may in some measure admit them as pathognomonic characteristics.

[1] 'Thèse de Concours,' 1842, p. 132.

[2] 'Bulletin de l'Académie,' vol. ix, p. 449.

Chondroid, colloid, melanotic cancers, fibro-plastic and epithelial tumours, never present these characters; a portion of the neighbouring tissues being adherent to these tumours, and always confounded with them, can never be separated from them by simple detachment.

We thus see, that it is not only possible, but I purposely repeat, it is easy to distinguish adenoid from malignant tumours; and as they are pretty frequent, this is so much gained on the diagnosis of cancers.

I have already stated (p. 287) the reasons which prevent me from designating adenoid tumours as simple partial hypertrophies of the mamma. The more the cases become multiplied, the more I observe, the more closely I examine the question, the more firmly I am convinced that microscopists are mistaken on this subject. As, however, there really do exist hypertrophies of the mamma (p. 175), we have, it appears to me, an object with which to compare them, so as to settle the question. I have, in fact, met with innocent tumours formed by the mammary tissue itself, which was simply indurated or hypertrophied; I have even seen several varieties of these hypertrophic tumours; I have seen them existing, as partial, general, subinflammatory, painful, and indolent swellings; some arising in consequence of inflammatory action more or less manifest; others, forming slowly without appreciable cause. In all the cases, the tumour was irregular, rugged rather than bossilated, evidently forming a portion of the organ, moving only with it, and not gliding in any way amongst its septa or lobules; it rather suggested the idea of scirrhus or encephaloid, than of an adenoid tumour properly so called.

If adenoid tumours were hypertrophies of some of the mammary lobules, they should seem continuous with the gland, at least, at some point of their periphery; it is, however, positive, that they can be detached from the tissues surrounding them without trouble, by simple enucleation, and that in whatever way we look at them, they present no pedicle nor root nor prolongation of their proper structure. If formed of several lobules, we see that, though continuous with each other, they are simply connected by cellular or fibrous bands, from which it is possible to disengage them without breaking the continuity of the structure that is essential to them. In short, the tumour then resembles either a chestnut or a potato, or a mass of lymphatic glands, surmounted

by a greater or less number of accessory lobules deposited upon them, or developed by swellings between the lobules and lamellæ, and the dense layers of tissue which make up the constituents of the mammary region.

If the mamma were composed of lumps or isolated lobules, instead of being made up of a thickened glandular element contained in a fibrous net-work, with very compact interspaces, we might here quote in favour of partial hypertrophy, what takes place in the formation of fatty tumours; but it is very easy to see that, in this respect, there is no analogy whatever between the structure of adipose tissue and the mamma or its lobes. There remains then the epithelial or fibro-plastic nature of adenoid tumours, and the microscopical composition of their elements in every way resembling the real mammary tissue. In spite of my esteem for microscopical researches, I do not consider myself at all called upon to believe in the identity in composition of these two tissues, merely from the circumstance that the microscope does not find any difference in their cells, whereas I myself, by simple observation, recognise in them such manifest and well-marked differences, and characters so completely opposite.

§ 3. OTHER INNOCENT TUMOURS.—Other forms of scirrhus are not always easily distinguished from genuine hypertrophic tumours of the breast; in fact, at their commencement both these lesions occur in the form of a tumour or rather of a tumefaction, or undefined induration of the normal tissues. I here, however, speak only of partial scirrhus and partial hypertrophy; for scirrhus *en masse*, whether stony or lardaceous, cannot be mistaken for an hypertrophy of the whole extent of the mamma.

In the case both of scirrhus and of partial hypertrophy, the tumour ordinarily of moderate size, only occasionally exceeding the dimensions of an egg, has no precise limits; irregular, flattened, and not globular, it is evidently formed by a portion of the natural gland, which has become thickened or indurated. In all cases, if the affected portion preserves a certain degree of suppleness; if there be no depression upon its surface; if its various rugæ project notably on the surface of the breast; if with an elastic and softened density, which is often also as manifest at the circumference as at the centre, we find it unadherent to the integument; if none of its bosses exhibit a stony hardness; if there be no indication of puckering or of radiated induration of any

part of the tumour; if the disease have developed itself with a certain degree of slowness without the general economy suffering, we are justified in considering it as an example of partial hypertrophy, and in rejecting the idea of scirrhus. In two words, scirrhus forms a dry, hard, stony tumour; whilst mammary hypertrophy forms a moist and supple tumour, although elastic, and tolerably firm. Still, it must be confessed, that in certain cases, they are not easily distinguished, and that their confusion, which is almost inevitable at the commencement, prevents the possibility of absolutely denying the transformation of an hypertrophic tumour into a genuine scirrhus.

Encephaloid cancer also occasionally presents a marked analogy with general hypertrophy, with chronic subinflammatory, or other affections of the breast.

A lady, who was still young, being only thirty-five years of age, consulted me on several occasions, for her left breast, which was double the natural size, and transformed into an almost homogeneous, very slightly irregular mass, of elastic, semi-fungous, lardaceous consistence, and in other respects presenting the characters of somewhat firm encephaloid. At first sight, the tumour bore some resemblance to chronic engorgement, or indolent hypertrophy; it differed, in particular, but little from the breast of the Spanish lady, of whom I spoke in the article on engorgement. Still it was not difficult to distinguish; subject to deep-seated acute pain, it was covered with a greyish indurated integument, at some parts softened; there was glandular enlargement in the axilla; the general health, especially the digestive organs, had already suffered considerably; whilst in the case of the former lady, there was no pain, no axillary enlargement, no digestive disturbance, no alteration in the countenance. Her tumour was lardaceous rather than elastic, and almost throughout of the same consistence, presented no boss, and was covered by an integument which was rather distended or thickened than altered in character. It is remarkable, that diffuse hypertrophies (p. 176) are more easily confounded with encephaloid, or even with some cases of scirrhus *en masse*, than with the adenoid tumours, which have been described as partial hypertrophies. A patient from Soissons (p. 311), had her right breast almost tripled in size, and transformed into a sort of globe, the integuments of which were not at all altered: the tumour resembled the case of the Spanish lady mentioned above. Nevertheless, its

bossilated appearance, its elasticity, its mobility, its suppleness, and independence of the skin, would alone have prevented an experienced person from confounding it with cancer. I have met with a sufficient number of adenoid tumours of a large size to enable me to state, that they are always bossilated or lobulated, always moveable in the midst of the healthy tissues, and to the last, remain distinct from mammary hypertrophy; and that if they can be confounded with anything, it is rather with encephaloid cancer, than with hypertrophy properly so called; genuine hypertrophy of the breast differs less, on the other hand, in its clinical characters from encephaloid than from adenoid tumours.

Some *hæmatic tumours* sometimes resemble cancerous growths, but of the encephaloid or melanotic variety only. Often, in fact, the encephaloid tumour preserves a more or less firm lardaceous or fungous basis, and is surmounted with a cyst filled with reddish serum, as was the case with Madame L— (p. 362).

Primarily elastic and bossilated, this lady's tumour had, in the space of a year, attained the size of a large hen's egg; and subsequently it had become fluctuating, so as to suggest the idea of a cyst. I drew off from it two spoonfuls of a reddish, somewhat yellow fluid. The puncture did not heal, but gave exit to a continual ichorous discharge, and the diseased portion remained hard, and preserved the characters proper to encephaloid tumours.

An almost precisely similar case occurred at the hospital of La Charité, in 1848. The tumour, half as large again as that in the case of Madame L—, was situated on the right side. I incised it with a bistoury, and gave exit to half a glass of yellowish black serum. The wound never healed, the tumour continued to increase, and the patient, who lived at Batignolles, refused to have the breast extirpated; but frequently came to see me at the hospital, so that I was able to trace its progress, and to ascertain its encephaloid nature until the very last.

The young girl, who was sent to me by M. Leroy-Desbarres (p. 267), presented an example of hæmatocele, which strikingly resembled the tumours I have been speaking of; but in this patient the swelling was very large, so that puncture gave exit to a tumbler of fluid, and besides the indurated tissues which formed the cyst there was contained in the interior a fungous mass, almost as large as the fist, of purely hæmatic character.

In following with attention what was there seen, the question arises, whether a tumour in a patient advanced in life, may not

become a cancer, supposing time be given to it to develope and to go through all the natural phases of its evolution. In the following case, it must be admitted, it would have been easy to have mistaken the hæmatocele for an encephaloid.

Case.—*Tumour as large as a melon of medium size, and of hæmatic character, in a patient of fifty-four years of age; extirpation; radical cure.*—Madame C—, the wife of a farmer, short, stout, muscular, and always enjoying good health, was brought to me in the month of June, 1848. She had given birth to several children; but had not suckled any of them.

On examination, I discovered a tumour as large as the head, which occupied the whole extent of the right mamma. It had appeared subsequently to a blow; but had grown slowly, and without pain. When I saw her, it was globular and hemispherical, and formed of tolerably large bosses, which projected on its free surface. Two of these bosses were of a pale red colour, and covered with thin, adherent integuments; in all other parts, they were free beneath the skin, and the whole mass was loose on the surface of the chest.

Although the disease had been considered to be an example of encephaloid cancer at an advanced stage of development, I came to the conclusion that there was nothing malignant about it; with a tumour of such long standing, the absence of enlarged glands in the axilla, the fresh healthy look of the patient, the integrity of the skin, and its mobility over nearly the whole extent of the mass, the freedom from pain, and in one or two points the existence of unquestionable fluctuation, which it seemed to me impossible to confound with the spurious fluctuation occasionally felt in a cerebriform tumour, all led me to pronounce it to be an innocent tumour, probably having an hæmatic effusion for its origin.

An operation was performed, with the concurrence of Dr. Thirial. In the first instance, I plunged a knife into the fluctuating part, and made a free incision into it. About a wine-glassful of reddish fluid escaped; and subsequently, I extracted by means of the fingers, a mass the size of the two fists, consisting of a hardened bouillon or pulp, somewhat resembling the substance met with in some cases of hæmatocele. As, however, I was only able to remove in this way about a third part of the bulk of the tumour, I determined to amputate the whole mass, and a considerable portion of the mamma itself.

The operation was followed by no unpleasant consequences; the wound at first suppurated abundantly, and in the course of six weeks had completely cicatrized. There has been no return of the disease, and Madame C— is in perfect health at the present time (November, 1853).

On dissection, I found in the amputated mass nothing but a lardaceous portion of the healthy tissues. Some fibrous lumps, having an adenoid appearance, formed its principal constituent. The fluid and pultaceous material which I had drawn off in the first instance, had been contained in one half of the tumour, in an extensive sac with thick walls. The walls of the cyst were combined with a tolerably dense layer of exudation matter, with which also they seemed to be extensively impregnated. There was no line of demarcation between the parietes of the sac and this matter which had a genuine hæmatic appearance.

In this case, as in others, the hæmatic tumour was nevertheless distinguished from cancer by its innocent appearance, by the stationary condition in which it had remained for years, by its association with good general health, by its absolute indolence, and by its independence of the neighbouring parts, with which it was continuous, notwithstanding a notable line of demarcation.

Serous or sanguineous cysts, simple or multiple, are not at all rare in the breast, as has been shown, at pp. 250 and 271, and are distinguished from cancers by the circumstances that their development is almost always insensible, and very slow; that they are scattered in the form of bosses in the tissue of the mamma itself; that the skin covering them generally remains unaffected; that the tissue which forms their basis almost always preserves a certain degree of suppleness or elasticity, and that they have, in short, neither the fungous softness of encephaloid, nor the stony hardness of cancer.

Abscess.—Two errors are possible in the differential diagnosis of cancer and abscess. A cancer may be taken for an abscess, and also an abscess for a cancer. I have already said, that certain encephaloid tumours become so soft and fluctuating, that if they are also regular or globular, and the skin covering them is red and soft, we may plunge a knife into them with the expectation of opening an abscess. I really do not know how often this error has not been committed.

A woman, somewhat more than thirty years of age, consulted

me at La Charité, in 1839, for a tumour the size of two fists, which was situated in the middle of the anterior part of the thigh, in the substance of the triceps, close to the femur. This tumour seemed to me so fluctuating, that I diagnosed it to be a cold abscess, or a fluid bloody tumour. M. Michon, who was of the same opinion, plunged a knife into it: it turned out, however, to be an enormous fungous cerebriform mass, which was obliged to be extirpated, and of which the patient eventually died.

In no part of the body has a similar error been committed more often than in the mamma. I have seen one of the most experienced surgeons of our time, extirpate a breast under the belief that it was a cancer, although it was in reality a large chronic abscess beneath the mamma. I am aware, also, from the evidence of eye-witnesses, as well as from the medical journals, that a few years ago a similar mistake was made in one of the large hospitals of Paris. M. Roux[1] states, that he himself committed this error, and M. Cruveilhier[2] attributes a similar one to Astley Cooper.[3]

One of these errors is scarcely more astonishing than the other. If encephaloid cancer may suggest the idea of abscess, here is no reason why an abscess may not present the idea of encephaloid. In these cases, an exploratory puncture should be resorted to before pronouncing as to the nature of the disease.

Nevertheless, by taking account of the antecedents of the patient, of the earlier characters of the development of the tumour, of the causes which seem to have given rise to it, and of the concomitant phenomena, it is almost always possible to avoid this mistake. A fluctuating encephaloid is usually destitute of inflammatory symptoms, and before becoming fluctuating, the tumour has been hard and irregular; and at the same time that certain of its bosses suggest the idea of a deposit, there are others which pre-

[1] 'Bulletin de l'Acad.,' vol. ix, p. 391.

[2] Ibid., vol. ix, p. 419.

[3] On reference to M. Cruveilhier's statement, I find that he merely alludes to the case mentioned by Sir A. Cooper, at p. 15 of his work 'Illustrations of the Diseases of the Breast,' from which it appears that Sir Astley was present, when another surgeon commenced to extirpate a tumour of the breast, which turned out to be an abscess. The mistake was discovered in time, and a poultice being applied, the case ended favorably.

If there be one thing more certain than another, it is, that had such an error been committed by Sir Astley Cooper himself, he would not have hesitated to have said so.—Ed.]

serve their hardness, their elasticity, and their lardaceous consistence, without speaking of the accessory accidents, and of the general physiognomy of the disease. In the case of an abscess, the tumour is more regular, more evidently soft, and less intimately confounded with the skin, which remains of a dirty grey colour, without presenting any puckered appearance; should some of the bosses project above the others, they rapidly thin, and can be depressed without resistance; the tumour appears as if thickened or somewhat lardaceous all around and over a considerable extent of its surface. The patients are sensible of deep-seated pain, of some throbbing and heat; and, on minute investigation, we almost always find that the disease has commenced by inflammatory phenomena.

Erectile tumours, whether arterial or venous, differ too completely from cancers, although perhaps susceptible of malignant transformation, for it to be necessary for us to study their differential diagnosis, particularly in the mamma.

What is to be said respecting epithelial tumours? A patient whom I operated on at the hospital, had underneath the areola, a sort of mushroom-like growth, the size of the thumb, somewhat pediculated, and consisting of cutaneous tissue; this tumour was of innocent kind. In two other patients, above the nipple and in its neighbourhood, I met with ulcers, gray, vegetant, and like the cancerous tubercle of the lips. Without, therefore, being absolutely certain that I have seen epithelial cancer in the breast, I am yet inclined to believe in the possibility of its existence. Moreover, it would not be of any great utility to establish its comparative diagnosis, for it also constitutes a malignant tumour.

I am acquainted with but one example of meliceric tumour in the substance of the breast (p. 247). Its size, form, and, in short, all its physical characters, might have given rise to the idea of an hæmatic or serous cyst, or of a fatty tumour, but under no circumstances of a cancer, whether encephaloid or schirrus. However, I possess the details of a case of a vast meliceric tumour, from the parotid region, which eventually became a cancer, and destroyed the patient. In the preceding case, the walls of the tumour were very thick; the epithelial and sebaceous matter which it contained was in a state of decomposition, which had advanced so far as to make us fear that, if left to itself, the tumour would in a short time have become malignant.

Solid *butyrous* tumours have been too little investigated to allow

of our stating in what they are distinguished from, or how far they approach to, the characters of cancer. If they may be confounded with cancer at all, it must be with encephaloid tumours, and not with scirrhus.

Judging from the cases that have occurred to myself, we may avoid the error by observing, that a butyrous tumour is thickened and solid throughout, instead of being fungous, elastic, or fluctuating; that it is moveable amidst the tissues, like an adenoid tumour; and that the skin is not adherent to it, except at an advanced period of its growth. We may, on the other hand, distinguish it from an adenoid tumour, by the circumstance that it has neither its elasticity nor its firmness; and that, in place of rebounding under the finger, it may in some measure be impressed like butter or grease.

Do these tumours deserve, however, to be classified as innocent growths? Do they not rather enter into the category of cancers? It is certain, at least, that, in the first case that occurred to me, the disease progressed, and destroyed the patient like a malignant tumour. The creamy or butyrous matter, found by M. Robin in the anomalous case of cancer related at p. 380, argues still more remarkably in the same way.

In short, it must, perhaps, be admitted, that butyrous tumours, primitively innocent, that partial hypertrophies originally simple, and meliceric or sebaceous, and even adenoid tumours, have terminated by assuming the characters of malignant growths, and by becoming transformed into cancers. Without affirming this as the ultimate conclusion of science on the question of cancerous transformation, I have thought it necessary to make these observations, in order to prevent a too absolute conclusion from being formed upon the opposite side.

§ 4. SPECIAL SYMPTOMS.—It seems to me that it will be useful to place by the side of the comparative diagnosis of tumours of the breast, the examination of certain special symptoms.

A. *Pain.*—One of the signs to which we attach the most importance, in the investigation of cancer, is pain. Most if not all practitioners, as well as laymen, consider pain as one of the most essential signs of cancer; in their opinion, cancer can scarcely exist without pain, and they readily believe that a non-painful tumour of the breast cannot be cancerous. On this sub-

ject, however, there is an entire mistake. Almost all innocent tumours of the breast are at times accompanied with pain. The small knots that occur in the gland, although of innocent nature, have as one of their characteristics precisely that of being very painful. I have seen, I do not know how many women, tormented for months, or even years with acute pain, at one spot in the breast, without the slightest tumefaction of unpleasant character arising, and without there being any real tumour in the painful organ.

How often, on the other hand, have I not seen enormous encephaloid tumours pass through all their stages without causing any pain to the women in whom they have occurred, and who, from this circumstance, scarcely considered themselves at all ill. Scirrhus itself, especially lardaceous scirrhus, and scirrhus *en masse*, often exists for several months without being accompanied by pain. Pustular (tubercular) scirrhus is almost always destitute of pain, and it is the same thing with napiform scirrhus and with schirrus in plates or layers on the integument. There is, in fact, perhaps but partial scirrhus, stony scirrhus, whether accompanied by hypertrophy or atrophy, and radiated scirrhus, with which pain is almost always associated.

It is far, however, from my intention, to maintain the opinion that cancer is never painful. I simply affirm as the result of a large number of clinical observations, that it is not so always, and that the majority of cancers are so only at an advanced period of their development; and that, consequently, the existence of pain cannot serve as a means of distinguishing cancers from innocent tumours.

This very day I was consulted by an English lady, aged 60, whose left breast was completely transformed into a scirrhous mass, with a multitude of tubercles in the neighbourhood, and even in the very tissue of the mamma itself; nevertheless, the lady, whose disease seemed to have been of five years' duration, had suffered so little, that it was only a month ago, that, for the first time, she determined to take advice, alleging as the reason for her indifference, that as she had never suffered any pain, she had never considered herself ill.

At the commencement of 1852, I saw, with Dr. Goujon, a lady, aged 72, who sent for me in consequence of a fracture of the neck of the femur, but who paid no attention to a tumour which she had in her right breast. Yet this tumour, the commence-

ment of which dated more than twelve years back, was nothing else than a stony cancer, surrounded with red, widely ulcerated masses, which extended to the fold of the axilla, and had given rise to considerable engorgement of the whole arm. The patient had never spoken of it either to her family or to any one else. She had contented herself with simple applications of her own prescribing, and all because she had no pain or suffering from it.

I should the less insist upon these cases, if the common doctrine was not injurious. Laying great stress on pain, which they consider an essential sign, practitioners have long considered tumours as innocent, which were really malignant; and by giving advice to their patients, based upon this opinion, they allow the disease to make progress, and to become generalised; on their side, the unhappy patients, persuaded that the affection of their breast is not dangerous, since pain is not associated with it, maintain a fatal security, and pay no attention to the tumour at the time when it could readily be removed.

There is not a week in which I do not meet with patients, who, in answer to the surprise that I express at their having suffered from the disease for so long a time without speaking of it, allege as their principal excuse, but "I have no pain, I have never experienced any suffering from it." Before continuing the further discussion of symptoms, I content myself, therefore, with stating first of all that the following axiom may be laid down upon the subject: "In the mamma as well as elsewhere, there may be every description of pain, without the existence of serious disease; in like manner as there may be formidable disease, for instance cancer, without the patient experiencing the slightest pain. Nothing is more dangerous than to estimate the malignity or innocence of any disease, from the intensity or the absence of pain in any organ whatever."

These observations, however, are applicable only to the first stages of the disease, for I do not deny that it is generally true, at a more advanced period, that cancers almost always become the seat of pain, which is sometimes very acute; but, at that time, the pain is no longer of diagnostic importance, since the existence of other specific characters, leaves the question of the nature of the disease without doubt.

As to the character of the pain, in cancerous tumours of the breast, there is, in the first instance, nothing specific about it. Hardly differing from certain neuralgic pains, from the pain or

shooting which at times occurs in innocent tumours, and even in a breast in which there is no tumour at all, this cannot be of great assistance in the determination of the nature of the disease.

Nevertheless, at a later period, the pain, when accurately investigated, is not without value, should the other characters of the affection not be sufficient without it. The pain of cancer is usually plunging, deep-seated, constricted. It seems to the patient as if the tumour were surrounded with cords, which tend to crush it, or at any rate to increase its fixity and weight. At other times, it is of a shooting character; it seems as if the breast were traversed by radii, or, as it is expressed by Dupuytren, by *flashes* of pain. According to the patients themselves, it is as if they were stabbed with a knife; some complain of a sensation of burning, and others of extreme cold. Usually, the pain extends by radiation, of which the cancer is the focus or centre. However, it is scirrhous much more than encephaloid, which is thus accompanied. Chondroid, fibro-plastic, epithelial and melanotic cancer are often exempt from or are at any rate hardly more often accompanied by it than tumours of an innocent nature.

B. *Discharge from the Nipple.*—A sign or symptom, which has hardly been specially spoken of hitherto, has of late been studied by M. A. Richard.[1] I refer to certain discharges that proceed from the nipple.

Having noticed on five or six occasions in thirty cases of tumours of the breast, that at an early period of the disease, a bloody or serous discharge occurred from the nipple, M. Richard asked himself the question, to what class of tumours should this discharge be referred. His researches have led him to believe that innocent tumours, adenoid tumours, alone give rise to it; that hence it is a diagnostic symptom of great value, since it serves to distinguish non-cancers from genuine cancers of the breast.

Without absolutely rejecting the conclusions of the author, I still would not, until we have more complete information, accord to them too great a degree of confidence. Discharge from the nipple is a phenomenon that I have met with very frequently. Many of the patients were affected with cancer, but I confess to not having attached sufficient importance to the circumstance, to be

[1] 'Revue Méd.-Chir. de Paris,' 1852.

in a position to estimate its complete value at the present time. I may add, also, that other observers who have also remarked it, M. Lebert amongst others,[1] who quotes three examples, only mentions it, as do Boyer[2] and A. Bérard,[3] as occurring in cancerous tumours. Bérard adds, that it may exist without cancer.

It is, moreover, a discharge of which there exist several important kinds that must not be confounded together. Thus we ought, in the first instance, to except the discharge of eczematous affections, nor can there be a question respecting the bloody or ichorous discharge which takes place from the fissures, cracks, or ulcerations at the root of the mamma, in patients suffering from confirmed scirrhus. It is a discharge of fluid sometimes analogous to blood, sometimes like light-coloured coffee or beer, or reddish serum, which escapes from the interior of the mamma by the nipple, without apparent solution of continuity; there being every indication that the fluid escapes from the lactiferous tubes.

Now why should its presence be a sign of innocent rather than of cancerous tumours? An author who, like M. Lebert, refers adenoid tumours to hypertrophy of the mamma, implies, that being represented by an exaggerated development of the glandular tissue, they ought naturally to furnish the secretion and discharge of which I speak; but I have already said, and I believe proved, that these tumours are not at all continuous with the mammary tissue; that they form no part of the secretory structure; that no excretory canal proceeds from them; that from beginning to end they behave like tumours of new formation.

As regards practical experience, M. Richard, who has only seen the ichorous discharge from the nipple in women suffering under innocent tumours, nevertheless, relates a case derived from my practice at the hospital of La Charité, which, in my opinion, merely embarrasses the question, for in this instance the discharge existed in a tumour, whose cancerous nature was verified by the microscope, as well as by simple inspection.

Maintaining his opinion, M. Richard truly says that this tumour was not entirely cancerous, that there existed a kind of adenoid tumour, a partial hypertrophy of the mamma in the

[1] 'Maladies Cancéreuses,' p. 343.

[2] Page 323, vol. vii, edition of 1818.

[3] 'Thèse,' &c., p. 96.

midst of the cancer, and that it was from the innocent portion that the discharge proceeded; but besides that the association of similar tumours has never hitherto been met with in the breast; it would not be the less necessary to admit that this kind of discharge can take place when the tumour is cancerous. It would not be of much use to be able to say, in a similar case, that there existed in the morbid mass a portion of innocent tumour along with the cancer.

It is necessary to remark, moreover, that adenoid tumours are not the only ones that give rise to it, since M. Richard speaks of a patient who applied to him, who was affected with a tumour made up of a simple collection of cysts. It is, in short, a discharge that I have met with oftener in scirrhus and encephaloid, than in innocent tumours, and which it would, perhaps, be necessary to refer generally to the dilatation or irritation of certain milk-tubes, disturbed in their relations or in their functions by the presence of tumours, of whatever nature or kind, developed in the mammary tissue.

c. *Constitutional Symptoms.*—Few practitioners in the present day, diagnose the cancerous nature of a tumour of the breast, from the appearance of the patient or the colour of the integuments. Some rare cases excepted, women afflicted with cancer in the breast, present at first nothing in their general condition, that can lead to the supposition of the nature of their disease. When the yellowish or brown complexion, the physiognomy which characterises what is called the cancerous cachexia, exists, it is because general infection is established: a glance at the tumour leaves no room for doubt, the nature of the cancer has long been too evident. This therefore is a sign that may be put aside, as it furnishes light only when it is useless.

All the difficulties of diagnosis are, in fact, accumulated at the commencement, and during the first stage of the disease; for while it is at that time that special signs are necessary, it is then also that they generally fail; and it is for this reason that it would be wrong to attach any great importance to those derived from pain, cachexia, &c.

d. How far can the results furnished by the *microscope* in the study of tumours, assist in the diagnosis of cancers of the breast? If by the aid of this instrument it were possible to

characterise the intimate nature of pathological products, it would, it must be acknowledged, become an invaluable aid in practice. It would be so easy to remove some fragments of an ulcerated tumour, there would be so little danger in extracting a small quantity of the tissue of an obscure growth, by the aid of a needle, a trocar, or a canula, so little substance is there necessary for the microscope, that the diagnosis of cancer would no longer be embarrassing or vague. Some microscopists do not hesitate even now to believe in such wonders; but what I have said (page 398,) respecting the cancer-cell, ought to put us on our guard against this pretension.

That microscopic researches are called in to aid in characterising cancer, removed from a patient, I well know: but in a clinical point of view, they expose us at present to dangerous errors, if we accord considerable importance to them. Notwithstanding what is stated by M. Broca,[1] the cancer-cell exists, on the authority of microscopists themselves, in products which have absolutely nothing cancerous. The patient whose fungous heel I excised, affords a conclusive example of this. It will be seen, on the other hand, as I have already shown (page 399), that it is wanting in tumours, the malignant or cancerous nature of which cannot be doubted. If interrogated at the bedside, the microscope answers that the cancer-cell does or does not exist in the tumour, what must the practitioner conclude? What surgeon, on such authority, will dare to form his opinion on testimony so uncertain?

Nor is this all: if even the cell constituted the fundamental, the *sine qua non* element of cancer, who could affirm that it was wanting in a tumour just examined, simply because the microscope had not discovered it in the portions which had been submitted to it? May not the exploratory instrument, plunged carefully into the tissues, bring away only innocent portions, although the tumour really contain many cancer-cells? A cancerous tumour is, in short, made up of various elements; it contains cellular tissue, fat, vessels, and often mammary tissue but little altered. Who does not see, that in the case quoted by M. Richard, for example, in which the tumour comprised at once an adenoid mass and an indubitable cancer, the exploratory instrument might have taken away non-cancerous tissue, quite as

[1] Op. cit., p. 461.

well as the malignant cell? What would have been the diagnosis in such a case?

In a chondroid tumour removed from the thigh of one of my patients, M. Lebert[1] discovered, by the microscope, in one situation all the elements of fibro-plastic tissue, and in the other at scattered points, cancerous juice, with the typical characters of encephaloid.

The most practised microscopists agree, that it is necessary, in order to pronounce on the nature of a tumour, to examine it entirely, to examine its different layers, and its different lobules. To be certain that a tumour contains no cancer-cells, would it not, in fact, be necessary to have it parcelled out to infinity, and in some way or other, to have all these portions one after another submitted to the scrutiny of the lens?

The same observation may thus be made respecting the microscope, as has already been made respecting pain; it clears up nothing, and only engenders doubt and uncertainty, when its aid is most required; that is to say, in the first stage of cancerous tumours. The diagnosis of the disease, on the contrary, is sufficiently plain, when it is in a condition to give affirmative or negative testimony. For these reasons, therefore, I do not admit that it is yet possible to diagnose cancer of the breast by the aid of the microscope, better than by ordinary symptoms and by purely clinical observation.

[1] 'Union Médicale,' 1853, p. 15.

CHAPTER III.

NATURE, ETIOLOGY OF CANCER.

In former times, it was readily believed that repeated irritation and inflammation were capable of giving rise to cancer. Broussais and his school, for a moment revived this doctrine, which is now abandoned, and will not, in fact, bear the slightest examination. Blows and external violence, though frequently referred to in such cases, are both equally insufficient, in a general way, to explain the origin of this grievous malady; perhaps, however, it may be as well to review this question once more.

External violence.—If, as it has been said, blows, falls, or repeated mechanical irritation, were capable of producing cancer, we could occasion it at pleasure; but all the world knows, that it is no more possible to produce cancer purposely, than to cure patients who are thus afflicted.

To patients who refer their tumour to external violence, and many women afflicted with cancer of the breast are in this position, it is to be answered that the tumour was pre-existent, though the patient had not perceived it before, and that the violence was the immediate not the ultimate cause. This reasoning has, perhaps, some foundation, but the contrary opinion is not untenable. If many women cannot remember any circumstance that could have acted as the exciting cause of their tumours, it by no means follows that there may not have been some pressure or some forgotten irritation. A contusion, a pinch, quickly forgotten, may become the source of disease, which does not show itself until a later period. It seems to me so difficult, in some cases of cancer of the mouth, of the lips, or of the tongue, to deny the influence of long-continued irritation consequent on decayed teeth; so many patients refer cancer of the lips to the contact of a pipe, and this etiology appears so evident in some cases, that I should not dare to deny its reality in all cancer patients.

The case of blisters or of permanent issues, has often been cited to prove the insufficiency of repeated irritations to produce

cancer. Never since the time of Bayle and Cayol, perhaps it may be said, has an issue or a blister been seen to become transformed into cancer; how many unfortunate people have their legs riddled with ulcers all their lifetime, without their becoming cancerous? and who has ever seen an ulcer of the legs that was not cancerous from the beginning, become so afterwards?

I know not what other practitioners may have observed in this respect; but for myself, I have already met with ten examples of issues or blisters becoming cancerous in the arm or leg. I have operated on six, and seen operations performed on two others. They all, it is true, belonged to the epithelial variety; but they did not the less follow the phases of this form of cancer to the very last. One of the patients, a strong and robust man, whom I long treated by cauterization with sulphuric acid, has experienced three returns of the disease in the same place. M. Jobert, who attended him at a later period, was obliged to resort to disarticulation of his arm. New tumours developed themselves upon the clavicle and on the side of the chest: and, subsequently, the poor patient died, with signs of similar tumours in the interior of the chest.

A lady, whom I had cured of a similar ulcer in the left arm by the employment of caustics, was again attacked a year after, with lancinating tumours in the axilla. I went to see her, near Gisors, where she was living during the summer, and I found her a victim to the development of a hard and bossilated, very painful mass, which occupied the whole cavity of the axilla. Brought back to Paris, this lady, surrounded with every kind of attention, consulted everybody, and tried all varieties of treatment, and yet her tumour soon gave rise to new ones upon the clavicles, and by the side of the breast, which ulcerated, assumed all the characteristics of cancer, and finally caused death, after frightful sufferings. In another lady, whom I saw with M. Vidal, it was a cauterization of the leg that had undergone the cancerous transformation; I operated upon two patients, at the hospital, who had cancer, the one on an old cauterization, the other, on an old blistering of the arm. The only patient of this kind who may, perhaps, be considered as cured, has as yet remained well but for five years; this cancer, which is *epithelial*, has been fruitlessly treated by caustics. I extirpated it, with the concurrence of Dr. Delatre, the patient's father, in the spring of 1848, and the wound, which cicatrized regularly, has not since caused any

anxiety, although the patient is subject to attacks of asthma or suffocation; during his cure, too, the axillary glands became so swollen and painful as to require the application of five or six leeches at intervals of every ten days.

To those who consider that cancroid tumours are not cancers, these facts, which all apply to epithelial cancers, will, perhaps, be of no value; but to the mind of the true surgeon, they will, I think, admit of no reply.

Without absolutely denying the influence of external causes in the production of cancer, some authors confine themselves to saying, that at least a special predisposition is necessary; that without predisposition, the external cause would not have produced any result.

It certainly is necessary, since we cannot produce the disease at pleasure, that the individuals afflicted with cancer should have in their organism, a certain predisposition to contract it; but admitting this predisposition as a fact, science is notwithstanding but little benefited. All diseases could plead the same peculiarity. Without predisposition, phthisis rarely occurs. Is not an organic predisposition also necessary for the development of scrofulous complaints? Are not some individuals predisposed to fatty or other tumours, and to steatomas? Does not pneumonia itself require, in most of those whom it attacks, a special predisposition? Arising occasionally from the most trifling causes, whilst similar causes, of far greater intensity, produce nothing resembling it in an infinity of other persons, it is natural to admit the existence, in the case of cancer, of a special predisposition; but this does not in any way prevent the necessity for an incidental cause, without which there would be no manifestation of the disease.

I.—PREDISPOSING CAUSES.

As yet, no proof has been given that the predisposing cause of cancer exists in the form of heterologous material in a latent condition. It exists neither in the age, nor in the sex, nor in the constitution, nor in the state of the general health, nor in the diet, nor in the climate, nor even in the nature of the tissues. If it be true that youth is less exposed to it than old age, it is equally certain that no period of life is absolutely exempt from cancer. Cancer of the breast, in particular, is less rare than has

been supposed before the age of thirty. In the year 1849, I saw an example of it in a young lady of seventeen. The tumour, which was clearly encephaloid, was as large as the head of a new-born child. Extirpation was performed; it grew again, and the young lady fell a victim to general cancerous infection. I have met with many facts of the same nature, in women aged twenty-five, twenty-six, twenty-seven, twenty-eight, and thirty. Cancers of the breast are most frequently met with between the ages of forty and sixty; but other periods of life are not exempt. The most advanced age is not free from it. The cases of many women aged seventy-five, eighty, and even ninety, have afforded me a proof of this. Amongst others, I attended two ladies, sisters, Mesdames C—, the one aged eighty-five, the other eighty-nine, each of whom had a well developed scirrhus of the left breast. Moreover, if cancer of the breast is more common after thirty than in youth, is it not the same with all the serious diseases of this organ? More disposed to inflammation from fifteen to thirty years of age, the breast becomes more subject afterwards to affections of an organic kind.

Out of 212 scirrhous tumours of the mamma, observed at the hospital, there were—

Between 20 and 30 years of age	.	.	.	2
„ 30 „ 40 „	.	.	.	25
„ 40 „ 50 „	.	.	.	76
„ 50 „ 60 „	.	.	.	62
„ 60 „ 70 „	.	.	.	30

In the others, the ages were not stated.

Out of 61 cases of encephaloid, there were—

Between 20 and 30 years of age	.	.	5
„ 30 „ 40 „	.	.	6
„ 40 „ 50 „	.	.	19
„ 50 „ 60 „	.	.	17
„ 60 „ 80 „	.	.	7
Above 80	.	.	7

So that it is between forty and fifty, and then between fifty and sixty, that the female breast is incontestably more exposed to cancer, whether in the form of scirrhus, or with the characteristics of encephaloid.

Is one mamma more liable to the disease than the other? My table shows, that out of 212 scirrhous tumours, 116 occurred

on the left side; 75 on the right, and 6 in both, with 15 not noted; but out of 56 cases of encephaloid, 33 were on the right, and only 23 on the left; so that, altogether, the proportion is pretty nearly the same for both sides.

Sex does not explain the predisposition to cancer, for if men are less subject to it in the mamma than women, the difference in the functions of the organ accounts for the fact, at the same time that, in many other regions, cancer is no less frequent in men than in women.

The habitual state of the health in certain constitutions has often been spoken of as a predisposing cause of cancer. Nothing that has been said on this subject seems to me to be well founded. Cancers of the breast develop themselves quite as often in women whose health up to the period of the occurrence has been perfect, as in feeble and sickly persons. How often have I not met with cancer in robust women of good constitution; in women whose good looks excited the envy of every one; in plethoric muscular women, as well as in those who were nervous, weak, or susceptible; in lymphatic, and fat women, as well as in the dark, lean, and melancholy.

In short, my observations authorise me to say, that no organic constitution, no state of health, general or habitual, affords protection from cancer; there is no ground for seeking here the predisposing cause of the disease. I may say as much of the moral condition; sadness, grief, uneasiness of mind, anguish of all sorts, referred to so much by the public, and even by some writers, absolutely play no part in the production of cancer; and, if one does take any notice of it, it is rather to humour the patient, than to satisfy a scientific requirement.

What may be said of diet is but little more conclusive. Even supposing that the abuse of spirits, the use of spiced dishes, irritating foods, or irregular diet, may have some influence in the production of cancer in the stomach or intestines, it is, at least, doubtful, whether persons given to these excesses are more exposed than others to external cancer. Cancer of the breast, incontestably the most common of all, is met with precisely in that sex whose alimentary regimen does not expose them to the infractions of which I have just spoken.

The general habits of life, the kind of occupation, the different sorts of exercise, are equally inadmissible as predisposing causes of cancer; although the contrary has been asserted by some authors.

The same is the case with climate, and with hygienic conditions in general. I have seen cancer of the breast in the inhabitants of towns, as well as in country women; in rich women, as well as in the poor, or in those who live in wretchedness; in women of one country as well as of another. There is every indication that the relative frequency of this disease is nearly the same in England, Russia, Germany, France, Italy, Switzerland, Portugal, and Spain; and the inhabitants of the two Americas, the Indies, and Africa, are no more exempt from cancers than the people of Europe. Besides, how could it be otherwise, since comparative medicine proves, that animals, domestic as well as wild, especially carnivorous animals, are themselves subject to it.

Peculiarities in the texture and functions of certain organs, however, exercise an unquestionable influence in the production of cancer. It is certain, that the testicle in men, and the breast in women, and that the eye, and the lips, in both sexes, amongst external organs, are more subject to it than any other parts of the body. The complicated texture of the testicle and of the mamma, of the latter especially, readily accounts for the fact; the density, the *dryness* of its cellulo-fibrous tissue; its vascular structure, into which the lymphatic system largely enters; the consistence of its parenchyma; the number of its lactiferous tubes; the interlacement of its different elements; the presence of a mucous lining in its excretory radicles; and its special functions, all unite in the breast, to call forth the production of heteromorphous growths. Nothing in all this, however, can constitute the predisposing cause of cancer. For those who do not wish to feed upon illusions, or to satisfy themselves with words void of sense, the better way is to confess, that science is, as yet, completely ignorant of the nature of this cause.

II.—OCCASIONAL CAUSES.

Science is scarcely more advanced in respect to the occasional than to the predisposing causes of cancer. What is most clear, is, that cancer plays the part of a parasite in the organism, of a sort of organic structure which becomes substituted for the natural elements. A general antagonism has ever existed in nature; matter, eternal in its essence, perpetually changes its form and situation, in order to constitute beings and species destined to be in a condition of constant conflict, and which

have no other end but to destroy each other, whilst each one in its turn is destroyed through incessant substitution.

If man strives to bring about the disappearance of those species which most menace his existence; if the strongest and most intelligent beings tend everywhere to substitute themselves for those creatures which are less favoured by the Creator, it is on the other hand evident enough, that our own organism is perpetually menaced on all sides, and attacked by those species which threaten its destruction by their number, and make up by their malignity, for what they want in other respects. Who, on reflection, must not admit the power of the innumerable molecules and microscopic beings in the midst of which we live, which we swallow, and which permeate our tissues in every direction? Who does not see that the natural tendency of these myriads of imperceptible organisms is to disintegrate the elements of our proper structure, and to substitute themselves for those molecules the agglomeration of which represents man, and the large species of animals!

Mark this cancer, which has now the form of a globule, or vesicle, the size of a pin's head; let it proceed, and watch its progress; however small it may seem to be, or however minute its apparent force or power, nothing arrests its development, it continues to increase, to augment in volume; the particles which compose it multiply; it seizes upon, destroys, and substitutes itself for the organ in which it is situated, and causes the latter to disappear without leaving a trace behind. If, somewhat later, cancer reacts upon its own proper tissue, so as to destroy itself, it does not the less continue ceaselessly to attack and to destroy the structure of the part in which it is situated, so as to ensure its complete disorganization, and to threaten life itself.

When once it has become established in the economy, it no longer confines itself to the region which has first fallen a sacrifice to it; it spreads, either in the neighbourhood, or through the vascular system, becoming disseminated, and everywhere diffused, so as to deposit the germs of destruction and of death in all those parts whither it has been carried.

To affirm, with Klenke,[1] that cancer and the cancer-cell is an independent organism, a quasi-individual capable of developing and multiplying itself, when once it has become established in the midst of the tissues; or to hold, with Barron, and others, that it

[1] Broca, op. cit., p. 495.

is a genuine animal, an hydatid, is not the less to lose one's self in the field of conjecture without profiting science. Observation informs us, that cancer acts like a parasite, by substitution of active material, but it does not enable us to advance any further.

The *hereditary nature* of cancer, which follows from the preceding principle, is an incontestable cause of the disease. I have seen a vast number of women, in whom this was only too evident. More than a third of the patients, whom I have met with, have presented this feature. In some, it was the father, who had died of cancer of the pylorus, or liver, or tongue, or of the genital organs; in the greater number, the cancerous disease had existed in the mother, either in the uterus or in the breast. I have seen families, in which three sisters, daughters of one mother, who had died of cancer of the breast, were attacked between the ages of thirty and forty years, with cancerous tumours in the same situation. But how does the hereditary nature of the disease become established? On this subject we are entirely ignorant, and there is nothing at first sight to show, whether there will, or will not be, any manifestation of the disease in the descendants of those who are unfortunately affected with it.

One circumstance we ought on no account to lose sight of in the investigation of the occasional causes of cancer: it is, that this disease scarcely ever occurs in the first instance, except in those organs that are susceptible of being injured or irritated by external objects; in fact, the frequency of cancer bears a distinct relation to the liability of the parts to external violence. What organs are more exposed to injury than the testicle or the mamma? what to excitement of all kinds than the uterus, the lips, and the tongue? what part is more exposed to the irritating action of drinks and food, and foreign matters, than the isthmus of the gullet, the œsophagus, the stomach, the pylorus, some parts of the small intestines, the colon, rectum, or bladder? Why, if external agencies have nothing to do with the production of cancer; why, if the disease is from the first a constitutional affection, does it almost invariably commence in some very limited point of the economy, and continue there for so long a period, whilst the patients in other respects enjoy such excellent health; why does not a change in the general health precede the external manifestation of cancer, instead of following, and being consequent upon it.

Adopting an hypothesis to account for an hypothesis, is it not

rational, since from the commencement, it seems to be a local disease, to admit that cancer really commences under the influence of some external cause. When once established, it tends ceaselessly to infect the economy with its substance, without losing its destructive action. Is it not thus that a virus and that poisons proceed? Is it not thus with the syphilitic virus, with the virus of rabies, and with the virus of glanders? When once a cancerous tumour has become established, we can understand that, by a process of exosmosis, its molecules may quickly become scattered about to an extent which cannot be precisely indicated. Who can deny that these molecules may remain latent or in a state of incubation for an indefinite period? Why do not the lymphatics take up some portions and deposit them in the glands? Why do not the molecules of the cancer pass also into the veins which surround or traverse the tumour? Is there anything astonishing in the fact that this tumour should rapidly become the source of a multitude of similar growths, either in the neighbourhood of the primary one or in more distant parts? Is it not simple enough to understand how that the whole economy eventually becomes infected? What need, in short, have we to admit, that cancerous tumours can only be the local manifestation of a general pre-existing malady?

It is true that the question arises, how is it that external violence leads to the formation of cancer, rather than to any other morbid product? and how can such a structure, such a peculiar product, so definitely constructed, be the consequence of an ordinary process? How can so specific a disease result from a phenomenon in which there is nothing specific? To these questions I have nothing satisfactory to reply, though I am sensible of them all the same. But the veil of obscurity in which all these subjects are enveloped, covers also many others in pathology, without the attention of science being seriously directed to them.

It is so important to understand the etiology of cancer, that we readily pardon those who suggest all kinds of suppositions. Almost all the ancient writers, and even a certain number of practitioners in the present day maintain, as I have already explained, that the majority of tumours, whatever be their primitive formation, are susceptible of cancerous transformation or degeneration; that a lardaceous induration, of whatever tissue or organ, may, perhaps, prove but the first stage of cancer: according to them, the word scirrhus, for instance, is applicable to all hard or elastic

tumours. We see them also still giving the name of scirrhus to fibrous tumours of the uterus, and making no distinction between scirrhus properly so called, and adenoid tumours, or partial hypertrophies of the breast. According to the doctrines of Laennec, which are held both by myself and by modern microscopists, all this is only error and romance ; cancer is a distinct disease from its commencement to its termination, when the tumour does not exceed in size the head of a needle, as well as when it reaches the size of the head : at all periods, in short, cancers form a species as distinct from other tumours as a cherry is from a pear, and there is no more possibility of the transformation into cancer of a tumour primarily of different nature, than I suppose there would be between a strawberry and a currant.

Each class of tumours, whether homologous or heterologous, has evidently an existence proper to itself. A fibrous tumour is no more susceptible of becoming a cancer than is a sebaceous cyst of being transformed into a fatty tumour. It is doubtful whether any one has ever seen a cancer become substituted for a steatoma, a sebaceous cyst, a fatty tumour, or an exostosis ; and the analysis of the cases quoted in support of the ancient doctrine, shows that they do not refer to cancers at all.

An example of pretended cancer following a steatomatous tumour of the scalp, which was brought forward in 1844, at the Academy, as an incontestable proof of transformation, was simply a case of decomposed atheromatous tumour. In Dupuytren's cases, it may readily be observed that, in place of cancerous degeneration, the tumour had undergone decomposition, as I have often seen in cases of polypus of the uterus, as, for instance, in two cases in the year 1852 at the hospital of La Charité.

It has also occurred to me, on several occasions, to remove uterine polypi which practitioners of note had affirmed to be cancerous. The mistake arises from the circumstance that, when the tumour is softened and broken down by putrefaction, there is a foul secretion from the genital organs.

I have never found it possible to establish any plausible relation between cancer and old inflammations of the breast. Multiple abscesses, which terminate by riddling the mamma with fistulæ and hardened lumps, may exist for whole years ; the glandular tissue and the interlobular septa may become hypertrophied, indurated, lumpy, and undergo all kinds of alterations, but there never follows anything at all resembling cancer.

It is especially in secondary cancer, in cases of multiplied or disseminated cancer, that the specific nature of the cancerous element may readily be appreciated. Is it, in short, possible to think of any transformation of a previously existing morbid matter, when we have before us an example of pustular cancer, or of scirrhous plates of the skin? Is it possible that a tumour that has the property of everywhere giving rise to others similar to itself, can be anything else than a specific disease, absolutely distinct from any other?

Nevertheless, in asserting these principles within the walls of the academy in 1844[1]—principles that I have maintained in my public lectures since the year 1820—I made some reservation, for there was some doubt existing in my mind on the subject. Struck by the near approach which seems occasionally observable between tumours whose nature and species at first sight are far removed from each other, I asked myself the question whether we must not, in some cases at least, admit that a genuine cancer may primarily have been an innocent tumour. In respect to the prognosis and treatment, this circumstance is of so much importance, that it must not be passed over, and we must not content ourselves with simply refusing to acknowledge it.

A woman had in the breast, for twenty years, a tumour the size of a nut, to which she had paid no attention, which was globular, indolent, moveable, and without adherence to the surrounding tissues. Is it possible to deny that this must have been an adenoid or innocent tumour? Nevertheless, when, in the space of six months, it had attained the size of the two fists, it was extirpated by Blandin, and found to be made up of encephaloid tissue.[2] There was, it is true, no microscopical examination, but its characters were so well marked, that there could be no doubt on the subject.

I am, moreover, led to the belief that a cancer sometimes originates in a clot or in a portion of plastic or hæmatic material which has been secreted or exuded. Cancers of the eye, for instance, have often seemed to me due to external violence, to blood effused between the membranes, and especially in the substance of the choroid. The question may arise whether some of these cancers do not result from the transformation of a sanguineous or other concretion, previously established in the globe.

[1] 'Bulletin de l'Académie,' vol. ix, p. 362.

[2] Ibid., pp. 35, 55.

Tumours are often developed in the substance of the bones, which speedily become the seat of pulsation and bruit: nothing so resembles cancer as these tumours; nevertheless, it is certain that they are formed merely by clotted blood and altered fibrine. I have met with them as large as the fist, and even larger in the condyles of the femur, in the substance of the tibia, and even in the bones of the head. I have seen varicose clots become transformed into a mass the size of an egg, the blood shut up in which was so hard, so concrete, that when extirpated, the tumours presented a homogeneous section of a reddish-black colour, exactly resembling that of a truffle; still, there was no doubt that they were formed merely of degenerated or changed blood. I have seen erectile tumours, principally of the venous variety, eventually terminate by undergoing a transformation which bore a strong resemblance to cancer. I removed from the root of the little finger of a young woman, aged thirty years, a tumour of the size of a nut, which had resulted from a blow dating three years back, and which became reproduced like cancer. It was evidently composed of sanguineous matter, and still preserved all the aspect of thickened, very solid, homogeneous blood.

Moreover, I have met with tumours made up of solid blood, in the midst of venous plexuses, which extended in every direction in the subcutaneous tissue. These had their fundamental tissue in a fibro-vascular or fibro-cellular network, and derived their size and existence from effused sanguineous matter which was infiltrated, solidified, and intimately intermixed with this sort of basis. Even in tumours which are plainly composed of blood still soft or pultaceous, and in which we do not on inspection expect to find cerebriform tissue, the microscope occasionally recognises the existence of the cancer-cell.

If, as I believe, adenoid tumours often arise from external violence, and frequently originate in a little effused blood or in a particle of concrete matter, derived either from the vascular system, or from the excretory canals, or from the glandular tissue itself, we thus arrive at a clue, which can easily be followed out in the evolution of tumours in general by exudation. 1st, the simply varicose, but hardened tumour; 2d, the erectile venous tumour; 3d, the reticulated sanguineous tumour; 4th, the simple sanguineous tumour; 5th, the adenoid tumour; 6th, the melanotic tumour; 7th, the encephaloid tumour: and thus there is formed

a scale, the first step in which is found in varix, whilst the last borders upon cancer.

I have no difficulty in admitting, however, that these suppositions are as yet far from being demonstrated. It is, moreover, piquant enough to see the most practised anatomico-pathologists, such as MM. Cruveilhier, Lebert, and Broca, seizing upon the doctrine of the independence of cancer, which I have maintained all my life, and defending it in the most absolute manner, at a period when, for my own part, I have begun to doubt its correctness. No one has adduced more proofs and good reasons in its favour than M. Broca.[1]

III.—CONTAGION.

The way in which cancer behaves in the midst of organs, and the hereditary nature which is justly attributed to it, have led pathologists to ask themselves, if it could not be occasioned by contagion. Several researches have been made with the view of throwing light on this question. Dupuytren and Alibert, who made the first experiments on the subject, came to the conclusion that it was not contagious; the same is the case with Vogel and Valentin. It appears, however, that Langenbeck, by injecting cancer juice into the veins of healthy animals, arrived at an affirmative result.

The following circumstance, in my opinion, affords a more conclusive proof than any of those which have preceded it. Cancerous matter, from a breast which I had just been operating upon, was injected into the jugular vein of a dog by MM. Follin and Lebert. Every precaution was taken to render it certain that the injected fluid was really of cancerous nature, and on examining the animal a fortnight afterwards, small tumours were found in the parietes of the heart, of the sizes of a pea, of a bean, and of the head of a needle, all of which contained cancer-cells.

Those who deny contagion will, perhaps, object that this was a simple coincidence, that the dog was affected with cancer before the operation; but, besides that such a method of reasoning is difficult to support, we must not lose sight of the fact that Langenbeck succeeded in just the same way.

[1] Op. cit., pp. 504, 511.

For long past, for my own part, I have considered the contagious nature of cancer not as demonstrated but as possible.

It has happened to me upon three occasions to see cancer of the penis affect the glans precisely and solely in that part which was kept in contact with a portion of the prepuce which had long been affected with it. The organ remained sound all around, and nowhere was there any continuity between the cancerous surface of the glans and the cancerous surface of the prepuce.

In the vagina, especially, this mode of development is very frequent. That cancer of the posterior lip of the uterus should, step by step, encroach upon the vagina, is natural enough; but it sometimes happens that the vagina becomes the seat of a cancerous mass, just in that situation which is habitually in contact with the os uteri, so that between this mass and the root of the neck there may be a considerable space of tissue which has remained sound.

I know it will be affirmed that this does not proceed from contagion, but that it is the disease which becomes repeated in various points in the same individual, and under the influence of the same cause. But I may ask, why does this general cause give rise to cancer just in those points that are in contact with the primitive tumour rather than anywhere else?

To conclude that cancer is not contagious, because people have failed to transmit it by inoculation, by injection into the stomach, or by injection into the circulating fluid, would be to come to a conclusion without consideration; for, by what right do we imagine that this must be the mode of the genesis of cancer? Because cancerous matter, which may be considered as dead as soon as it is removed from the individual, produces no effect, it does not follow that, were it long maintained in contact with another living portion, it would not reproduce itself. The case of Bellanger, who, according to Peyzilhe, became the subject of cancer in consequence of having breathed the ichor of a cancerous sore, and that of Schmidt, who, according to Lassus,[1] had a cancer at the root of the tongue, consequent upon having tasted cancerous matter, are no doubt insignificant, just as are also the cases of Alibert, of Dupuytren, and of Bicit, to the opposite effect.

If it be true that by connection with a woman who has cancer

[1] 'Pathology,' vol. i, p. 438.

of the uterus, a man does not become affected with cancer, and if the same thing be the case with the contact of the lips, and if we can handle with impunity every variety of cancer, both when the skin is intact and when the parts are destitute of epidermis, as so often occurs to surgeons, to patients, or to their attendants, this proves that the contagion of cancer is not readily induced; that other, and as yet unknown conditions are required, but it affords no evidence that cancer is not contagious. The clinical facts that I have observed, confirmed by the experience of Langenbeck, and by the remarkable observation of MM. Follin and Lebert, seem to me of a nature, at least, to shake the popular belief in this respect, and to show that the question of the contagious nature of cancer requires still further investigation. In taking leave of a subject which is worthy of all attention, my object is merely to suggest some degree of caution respecting the intercourse between persons in health and those affected with cancer.

CHAPTER IV.

PROGNOSIS OF CANCER.

Abandoned to the resources of nature, cancer never disappears. Those who believe or affirm the contrary are mistaken. Their assertions depend upon errors in diagnosis, or, at any rate, from their confounding tumours of different kinds under the title of cancer. I am amazed that a philosopher of the experience of Dr. Bennett should still entertain this belief.[1]

A scirrhus, an encephaloid, a napiform or fibro-plastic tumour, or a well-marked epithelial or melanotic cancer, fatally follow their destructive evolution until the death of the patient. When once it has commenced, cancer never retrogrades. We have no more reason to anticipate the spontaneous disappearance of cancer when it is small, the size of a pin's point for instance, than when it is as large as the fist or the head.

The correctness of this proposition is, unfortunately, too easily verified. Unfortunate for the surgeon, for the physician, and especially for any patient, who labours under a delusion on the subject, and deceives himself with a hope which has no foundation, and thus substitutes mere wishes for the sad reality. Of the two kinds of spontaneous cure of cancer which are stated to be possible, the first refers to encephaloid, the second to scirrhous cancer. The cause of the mistake in both instances is as follows :

When once an encephaloid cancer has ulcerated, it swells up, spreads out in the form of a fungus, and sometimes terminates by sloughing and falling off spontaneously (*vide* p. 364). The ulcer which is then left may discharge, contract, and even partially cicatrize, thus for a moment giving the hope of cure, which, however, is never realised, or, at any rate, for any lengthened period of time, as was the case with the Russian princess mentioned by Boyer, who died of the cancer at the end of eight months.[2]

[1] 'On Cancer and Cancroid Growths,' Edin., 1849.

[2] Vol. vii, p. 234, edit. of 1821.

This, then, is what has been described under the title of *destruction of cancer by gangrene.* I have personally met with two examples of it; but as the destructive process almost invariably leaves a portion of the disease remaining, we cannot anticipate from it the spontaneous cure of the cancer. It is, after all, nothing more than a destruction accidentally brought about by nature, or rather by the tumour itself, the growth of which is mechanically interfered with.

The spontaneous cure of scirrhus has been asserted to take place in another manner. In some patients, partial stony scirrhus, when ulcerated, becomes depressed, and so completely dried up, that it terminates by getting covered with a pellicle, which might be taken for a cicatrix. We sometimes see atrophic scirrhus contract and wrinkle up with such deep-seated furrows, as so forcibly to draw in the integuments, that all the neighbouring skin appears as if it were deeply puckered. Some pathologists have come to the conclusion that there thus takes place in the cancer a process of retraction, analogous to what occurs in the tissues of a cicatrix.

According to M. Virchow, the object of this process is to eliminate the cancerous material by a profound interstitial or molecular action, so as to cause the gradual disappearance of the tumour, and, in fact, to cure it. Any one who can satisfy himself with such notions, or fall into such strange delusions, can scarcely have followed the history of patients, or observed the course of cancers, otherwise than very superficially.

Scirrhous tumours never cicatrize except on the surface, and the finger carried over the seeming cicatrices always discovers that they rest upon a stony mass, upon a genuine scirrhus, which has become augmented in size or thickness, instead of decreasing or disappearing.

If, on the one hand, the tumour has diminished, it has extended on the other, or, at any rate, new growths will have formed either in the neighbourhood or in organs more or less distant. It is the same thing with the plaiting and atrophic process, which has made so great an impression on M. Virchow. On the 9th of October, 1852, I saw a patient, with M. Blatin, who was affected with radiated scirrhus, and whose right breast had improved so much for a period of three months, that the family could hardly understand the gravity of the prognosis which we had entertained from the first. The fact was, that the left breast had in its turn

become affected by the cancer, and that the cavity of the chest had also commenced to become diseased.

Underneath these radii, and in the deep-seated wrinkles, the density, and the desiccation of the scirrhus had augmented rather than diminished; and we felt certain that the nature of the disease had in no way changed, and that in one direction or in another, it was making progress instead of retrograding.

Let no one then repose in the false hope of the cure of cancer by the unaided resources of the constitution, for death is the natural termination of this cruel malady. In reaching this, however, it does not always follow the same route; nor does it always require the same time. Thus epithelial cancer, which is very rare in the mamma, is in some situations, as for instance, the face, compatible with a prolonged existence; encephaloid, on the contrary, which rarely extends beyond from two to four years, often progresses much more rapidly; and it is the same thing with melanosis.

The progress of some cases of cancer, of stony scirrhus, of atrophic scirrhus in particular, is very slow. It is this form which, in some patients, endures for ten, fifteen, or twenty years, without destroying life. Lardaceous scirrhus, on the contrary, proceeds almost as rapidly as encephaloid. It is the same thing with stony scirrhus *en masse*, and with stony scirrhus in plates or *en cuirasse*.

Patients with disseminated pustular scirrhus, as also those with fibro-plastic and chondroid cancer, may survive for several years. All these cancers kill eventually, either by contaminating the whole economy with their destructive elements, or by progressively invading the different tissues and organs.

The prognosis of cancer is, moreover, just the same at all ages, in both sexes, and under all the individual or general conditions of social life. It is true, however, that young subjects die of it somewhat more rapidly than persons advanced in years, although, notwithstanding this, some old persons die as rapidly as patients from thirty to forty years of age.

There is no evidence to show that the critical period of female life exercises any influence on the progress of cancer, that it increases either the gravity or the frequency of the disease. We meet with cancer of the breast in women most frequently at from forty to sixty years of age; but it is also at this period of life that cancer generally occurs in men. Neither has it been observed to

be more frequent from forty-five to fifty years of age than from forty to forty-five, or from fifty to fifty-five. In short, the prognosis of cancer is as serious as it can possibly be in the case of the most terrible disease which can afflict the human species. It is a disease which spares no one, and if therapeutical science were destined to remain as powerless as the constitution itself where cancer is present, we should have nothing left but to despair of our kind from the moment that we recognise its existence.

When once they have ulcerated, cancers of the breast become more and more constitutional, and terminate the patient's life, following a course, however, which is far from being the same in all cases. Sometimes, for instance, the tumours become multiplied to an infinite extent. They become developed successively in the neck, in the axillæ, in the different parts of the chest, on the surface of the belly, in the limbs, and in all other parts. Sometimes, on the contrary, scirrhus *en masse* and scirrhus in plates are associated together to such an extent, as to encircle the whole chest, and to suffocate the patient. Sometimes the disease seems to increase only on one side of the thorax, and principally to attack the axilla. Sometimes enormous stony or lardaceous masses occupy the whole cavity of the axilla, without the patient having any suspicion of what is going on, and although the tumour in the breast is still of small size. Recently, a patient came to consult me, who hardly considered herself ill, because she had only an ulcer, as large as a fourpenny piece, in the left breast, the whole of whose axilla nevertheless was entirely filled with a thick stony mass, upwards of an inch in thickness. In such a case, the corresponding arm is not long in becoming painful. The circulation in it gets difficult, and we see it speedily become œdematous, swell up, so as, in some instances, to double in size throughout its whole extent, and finally to resemble a limb affected with elephantiasis.

In place of simply attacking the external parts or the parietes of the chest, cancer of the breast often invades the internal organs, without its outward appearance having become much more terrible.

A lady from Versailles, Madame B—, often came to consult me, in 1850 and 1851, for a partially ulcerated lardaceous scirrhus, in the left breast, which scarcely caused her any suffering. Recognising a scirrhous prolongation to the summit of the axilla, and a little gland above the clavicle, I dissuaded her from

any operation, and advised merely palliative measures. Of delicate constitution and feeble health, she remained in this condition for more than a year, experiencing lancinating pains, at times somewhat severe, but without the tumours making much progress, without losing her good complexion, her activity, her gaiety, or her tranquillity. In the end, however, the arm swelled, and a distinct tumefaction formed between the breast and the clavicle. Some weeks after, and without the appearance of new external tumours, Madame B— could no longer digest her food, experienced pain in the stomach, rapidly grew pale, and lost her vigour. I went to see her at Versailles, when the whole of the epigastrium, a considerable portion of the umbilical region, and of the right flank, were occupied by an enormous cancerous mass, which accorded to her but a few weeks more of existence.

In other patients, the cancers, without previously invading the lymphatic system, or after affecting the glands of the neighbouring parts, spread to almost all the organs without implicating the vital functions, except in a slight degree. How often has it occurred to me to meet with cancerous tumours in different parts of the abdomen, liver, lungs, or muscles, in patients whose health had been seriously involved but for a short period. I have seen others also, who were so much affected with cancer, that they had the disease even in the bones of the chest, and in all the limbs. In 1850, I saw a poor woman, who had refused, three years before, to have a little scirrhous tumour removed from the right breast, and who, chained to her bed, without the possibility of making the slightest movement, was covered with masses of cancer from the head to the foot. This unfortunate creature had them everywhere, in the skin, in the muscles, in the lymphatic glands, in the limbs, on the head, the neck, the chest, in the axilla, in the substance of the thighs and legs; and all the organs contained in the abdomen appeared to be covered with the disease.

The patient's disease had commenced merely in encephaloid tumours of the breast, but terminated in cancer of all varieties at the same time. I saw an English lady, whose left breast had, in the first instance, been the seat of a large encephaloid cancer, which was removed; the wound healed, and subsequently there supervened new cancerous fungoid growths, afterwards stony patches, then an enormous swelling of the arms, then pustules, then masses in the skin over the chest, then lobules

or hard, lardaceous, fibro-plastic-like masses on the shoulders, and in the substance of the abdominal parietes.

At this stage of the disease, if the patients do not die of hemorrhage, or are not carried off by the abundant suppuration, and by the perpetual and intense pain, they generally acquire a pale yellowish tint, indicative of the cachexia of the cancerous infection; digestion failing, they become weaker by degrees, and eventually almost skeletons. On the other hand, they may become dropsical, principally in the inferior extremities, swell in the face, and die anæmic, and worn out by their sufferings.

Such, in short, is the fate that attends women unfortunately attacked with cancer of the breast, whether it be scirrhous, encephaloid, fibro-plastic, chondroid, or epithelial.

CHAPTER V.

TREATMENT OF CANCER OF THE BREAST.

The well-known gravity of cancer only too completely justifies the incessant endeavours that for centuries have been made to find a remedy for it.

Incapable of spontaneous disappearance, and endowed with such destructive energy, that if art does not succeed in arresting its development, it always terminates sooner or later by overcoming the powers of the constitution, cancer of the breast differs in these respects from the majority of other diseases. Thus syphilis, the virulent nature of which is incontestable, which commonly produces such ravages when not interfered with by art, has nevertheless a tendency to become arrested, and to extinguish itself in a certain proportion of the individuals who are affected by it. There is nothing even in the nature of rabies, the dreadful nature of which no one can deny, to prevent it also from becoming extinguished.

Alone then amongst all other diseases, cancer has always a fatal termination, if art does not interpose an obstacle.

Cancers of the breast, like cancers in general, have been treated by all sorts of remedies and applications. It would require a volume to name or simply pass in review, what has been proposed for this purpose. Like most surgeons, I have, at first, admitted the efficacy of some of these measures; but, after submitting them to a rigorous trial, in a great number of patients, I have come to the mortifying conviction, that not one of them is capable of curing genuine perfectly characterised cancer. The contrary opinion is maintainable only in consequence of errors of diagnosis.

People can only believe in the cure of cancer, when they have either been unable or unwilling to distinguish malignant from innocent tumours. From confounding with scirrhus and encephaloid, either partial or total hypertrophy, or cysts or adenoid tumours, &c., it has been thought that cancers have disappeared, when the cases have been those of innocent, or non-cancerous formations. Science but a few years ago was so little advanced

among us on this subject, that such confusion could scarcely be avoided in practice. In the present day, also, pathologists who regard cancer as a termination of diseases or of tumours originally innocent, are perpetually liable to fall into the same mistake.

This then is a question, which requires to be investigated to its root, and nothing in pathology can better show the importance of correct diagnosis, the indispensable necessity, in order to escape vagueness and uncertainty, of only taking account of facts relating to tumours previously correctly diagnosed.

I.—GENERAL TREATMENT.

The remedies or medicines for cancer are naturally of two kinds, internal and external. Amongst the first, stand losses of blood, either local or general.

§ 1. Repeated bleeding from the arm, which at various periods has enjoyed a certain amount of reputation, is no longer recommended by any one, except, perhaps, to fulfil some special indication. Leeches are not altogether in the same position. Broussais and his pupils, persuaded that inflammation was the source of cancer, as of almost all other diseases, had great confidence in this remedy, which Lisfranc employed more than any one else, in the treatment of cancers of the breast. But it is only necessary to cast a glance over what has been published under the auspices of these practitioners, in order to become at once convinced that they confounded together under the name of cancer almost all the tumours of the mamma, and that they have never succeeded in curing the genuine disease by the repeated application of leeches.

We must not, however, too absolutely reject the employment of leeches. I shall state by and by what we may expect from them. In pustular scirrhus, in stony scirrhus *en masse*, in plates, or in layers, and in encephaloid tumours, it is useless to try them; in genuine partial stony cancer, or in diffuse lardaceous cancer, they are equally valueless. If, indeed, the application of leeches can in such cases somewhat moderate the growth of malignant tumours, at most can they come under the category of palliative remedies.

§ 2. Purgatives and emetics have never been much employed alone as curative remedies in cases of cancer; but they have been made use of concurrently with other measures, as, for instance, with bleeding, with spare diet, or with the *cure by hunger*, recommended by Pouteau.

Severe dietary measures and purgatives are incapable of curing cancer; and if such a regimen do bring about a diminution in the size of the tumour, as also of the whole body, the cancer rapidly regains its volume, as soon as the primitive rigour of the diet has been somewhat relaxed. The cases quoted by Pouteau are, in other respects, altogether insignificant; and the treatment boasted of by this surgeon is no longer followed by any one. It is eminently worthy of the obscurity into which it has fallen.

§ 3. The preparations of *hemlock*, made famous a century ago by Stoerk, still enjoy some confidence with practitioners; and few cancerous patients die without having previously taken the extract or powder of hemlock. For my own part, I have prescribed preparations of hemlock, and even of aconite, to several hundreds of patients, and have found these remedies quite incapable of curing genuine cancerous tumours of the breast. By setting aside all engorgements and tumours which are not cancerous, we soon find how powerless is the treatment of Stoerk. It is easy to see, in reading the remarks of those who recommend hemlock, that it has never succeeded even with them, except in cases of innocent disease. The seeds of hemlock, said to be more efficacious than the rest of the plant or its extract, have in my hands proved equally useless. I am thus disposed to believe, that MM. Devay and Guillermond[1] have fallen into a complete error upon this subject.

Conicine, in the dose of from one sixth to three grains and one third of a grain per day, has in my experience also proved altogether inefficacious.

§ 4. Many other substances have obtained a certain amount of credit. Different solutions were recommended during the last century, and some during the present. *Iron*, and the carbonate of iron especially, produced wonders in the hands of Carmichael. Under the name of the resolvent fluid of Kæchlin, an *ammoniacal solution of copper* has been stated to cure cancer; and since

[1] 'Maladies Cancéreuses,' &c., 1853.

some practitioners assured me that its reputation was well founded, I felt it my duty to give it a trial. The results by no means answered my wishes. Of the 150 women to whom I have hitherto prescribed it, not one has experienced the slightest benefit; and if I still employ it occasionally, it is entirely because I do not wish to leave unfortunate patients who may consult me destitute of hope.

§ 5. *Arsenic* has had its partisans; Fowler's solution must not be forgotten in such cases; Dr. Walsh prescribes, as in some sense a specific for cancer, a preparation of the iodide of arsenic;[1] but it is evident, from what has been published on this subject, that arsenical preparations are incapable of curing really cancerous tumours. My natural disinclination to employ these substances has prevented me from prescribing them to anybody. Not being able to do good by their agency, I have feared to do injury.

Nevertheless, the neutralizing property and specific action of the mineral, have been so much extolled in similar circumstances, that, perhaps, there is room to submit arsenic to a rigorous trial.

§ 6. The well-known action, the incontestable power of *mercury* on the animal economy, soon suggested its application in the treatment of cancer. I have tried it, for want of something better, many hundred times, either in the form of the liquor of Van Swieten, or as soluble mercury, or as the pills of Dupuytren or of Sédillot, or as the cyanide or proto-iodide of mercury, or as the deuto-iodide of the same substance, or as calomel internally, or as friction with mercurial ointment, or as fumigation with the sulphuret of mercury, or as sublimed mercury in baths; but all my efforts have merely resulted in the knowledge of a fact, unfortunately too evident, that cancer no more yields to mercurial preparations than to the remedies above mentioned. I have not noticed that such remedies aggravate the disease, as M. Roux

[1 That Dr. Walsh never intended to assert the specific nature of the iodide of arsenic in cancer, may be seen by the following extract from his observations on the subject. "My experience does not enable me to make any affirmation as to the power which this medicine, unaided, may by possibility possess of causing the removal of scirrhous tumours; one reason of this being, that I have invariably, after a short trial of it alone, associated external agents in the treatment with it." (Walsh on the 'Nature and Treatment of Cancer,' p. 202.)—Ed.]

believes; but it is perfectly certain that they do not cause it to retrograde. It is the same thing with the decoction of Zittemann, which Rust found to be so efficacious.[1]

§ 7. *Alkaline substances,* which have also enjoyed some popularity, merit nothing more than the obscurity into which they have fallen. No one now-a-days seriously recommends as curative in cancerous tumours, the waters of Vichy, or the bicarbonate of soda. The hydrochlorate of baryta, which, fifty years ago, was so strongly recommended by Crawford, had but a short-lived reputation. It is useless to mention a series of still more insignificant measures than the foregoing, the wonders of which are alone dwelt upon by quacks.

§ 8. What has been said respecting *preparations of gold* in syphilis, suggested the idea of trying it in cancer. The rebellious nature of the disease has only given me too many occasions to ascertain what foundation there really was for the results published by the partisans of this treatment of Dr. Chrestien. Now, it is quite evident to me, that the muriate of gold is of no value whatever in cases of cancer. Moreover, it never cures syphilis; it merely prevents the disease from spreading. The success which has been attributed to it, has occurred only in patients previously treated by mercury; and it is far from possessing the activity which has been so ingeniously ascribed to it. Instead of giving it in the dose of some milligrammes or of a centigramme,[2] once or twice a day, as was recommended by Chrestien and his pupils, I administered it to patients in the dose of from twenty-five to thirty or fifty or sixty centigrammes, without there being any more evident result than would have followed the ingestion of pills of inert matter. Having regard to the imagination of the patients, I substituted one or two pills of crum of bread for the muriate of gold, and muriate of gold for the bread pills, and I found that the phenomena were produced as often from the bread pills as from the muriate of gold. I do not, however, conclude that the double hydrochlorate of gold and soda are inert substances; but it must at any rate be admitted, that it is destitute of any real value either in cancer of the mouth, or of the tongue in particular, or in cancer of the breast.

[1] Littré, 'Dictionnaire de Médecine,' vol. vi, p. 316.

[2] A milligramme is about $\frac{1}{68}$th part of a grain, and a centigramme about $\frac{1}{8}$th.—Ed.]

§ 9. It is unnecessary for us to stop to discuss the virtues of *quinine, sarsaparilla, sudorifics,* and *bitters* in general. They have no specific action in the disease under consideration; and I have not space to refute the assertions of those who in the present day maintain a different opinion.

§ 10. *Preparations of Iodine.*—Cancer is so disastrous a malady, that no long time elapses before any new preparation in the materia medica undergoes a trial. The efficacy of iodine, and its preparations, in a numerous class of diseases, certainly authorised a trial of it in cases of cancer; and consequently it has been employed, under all forms and doses, in an infinite number of cases of cancer. Its supposed action in cases of purely hypertrophic or tubercular engorgement of the lymphatic glands, in cases of pulmonary consumption, and in certain cases of suppuration in the bones, &c., led for a moment to the belief that cancer in general, and especially cancer of the breast, would not resist its power. Personally, I have never tried internally either the tincture of iodine, or iodine itself, as a remedy for cancer, but I have very frequently employed the iodides of potassium, of iron, and of starch. I have certainly prescribed the iodide of potassium in several hundred cases; and the truth is, that I have never seen this remedy assist to any evident extent the cure of a single scirrhus, of a single encephaloid, of a single chondroid or fibro-plastic, melanotic, or epithelial cancer, whether in the mamma or elsewhere. The efficacy of the iodide of starch and of iron, has been just as negative as that of the iodide of potassium, and Ullmann, who states that he has cured so many patients by means of this remedy, since the year 1823, is plainly mistaken or under a delusion on the subject.

§ 11. Another substance, which of late years has come into extensive employment, I refer to *cod-liver oil,* has also been prescribed in this intractable complaint. I have employed it, for in such cases it is allowable to try anything, and have administered considerable doses of it for months together, to patients at all periods of life, and in all varieties of cancer, but have found this remedy, which is so useful in a vast number of affections of the bones and of the lymphatic system, altogether inefficacious against cancer. The preparation which MM. Personne and Marchal (de Calvi) have recommended as a substitute

for cod-liver oil, under the name of iodised oil, has proved of no higher value in cancer of the breast.

In fact, when the cancerous nature of the disease is well marked, it may, in two words, be said that, up to the present day, we do not possess a single remedy, a single constitutional or internal application, that has ever succeeded in curing it. In this general condemnation we must include certain mineral waters, the waters of Lelles in particular, which still preserve some degree of reputation in these cases amongst laymen and with a few practitioners. Besides what has occurred in my own practice, I have also, in support of the opinion just pronounced, examined into many facts derived from the practice of others; and on every occasion that I have endeavoured to verify the results of cases quoted in favour of such mineral waters, or of such pretended curative measures, I have been obliged to come to the conclusion, that there had been a mistake as to the nature of the tumour, or, at any rate, that the so-called cure was not genuine.

II.—EXTERNAL APPLICATIONS.

So many pommades, ointments, plasters, poultices, powders, solutions, and topical remedies of all kinds have been proposed in cases of cancer, that it would be useless to enumerate or examine them all in detail.

§ 1. What shall be said respecting ointments of the iodide of potassium, mercury, or lead, of plasters of soap, or hemlock, or of the emplastrum de Vigo, &c.; of poultices of linseed, bread, carrot, onion, of the yolk of eggs, honey, or of all the ointments, plasters, and drawing, resolvent, or detersive poultices, since none of them possesses the slightest curative power in cases of cancer?

As one cannot remain indifferent, and with folded arms, in the presence of the victims of this disease, I, like the rest of the world, have invoked the aid of these different applications; and, like most other surgeons, I have only too soon become convinced of their uselessness, when employed in genuine cases of cancer. There is not a single exception to this statement, even in favour of those mysterious topical applications, which, under the name of secret remedies, have been proposed by fanatics or ignorant quacks. The confidence of serious men who boast of such remedies, always arises from the same cause, from the circumstance

that they have confounded innocent tumours with cancer. Those, then, who accord the slightest confidence to external remedies, in the treatment of well-marked cancers, expose themselves to the most painful deceptions; but I shall presently state for what purpose they may nevertheless be employed, and what may be expected from them.

§ 2. After my statements respecting compression, in a large number of publications since the year 1823, it is natural to suppose that I should be little inclined to reject it without trial in the treatment of any disease, and consequently I have employed it in cancer of the breast, with a hearty and sincere desire of finding it efficacious. The observations of Young, published in the year 1818, did not, however, make me lose sight of what Sir Charles Bell stated respecting it in the year 1809; and I always felt afraid that cancer would prove as refractory to this as to all other measures. Nevertheless, as the cases of Recamier seemed to me inconclusive, as they were all very incomplete, and as it was usually impossible to tell whether they referred to innocent or to cancerous tumours; and, as many of the patients whose history he relates were lost sight of before being cured; and as, in short, all that was stated by this celebrated practitioner, was of a nature to inspire but little confidence, and to leave much doubt in the mind of an attentive observer, I was led to try the effects of compression for myself in the treatment of cancer of the breast. Unfortunately, I was not long in finding that all was still error and deception. In whatever way it was applied, whether with dossils of agaric or of amadou super-imposed on each other, or with graduated compresses properly adjusted, or with padded plates of metal, or with bands of linen or peculiar bandages, or with strips of diachylon—compression, however, useful in other cases, had no effect in curing cancer of the breast. It may flatten or depress the tumours into the midst of the tissues, or into the intercostal spaces, and thus in some measure mask their existence, which no doubt has imposed on some persons, but it never leads to their resolution. I am quite unable to explain the success which M. Maissonneuve[1] is said to have obtained; and I am compelled to ask whether, notwithstanding his well known abilities, this surgeon has not committed an error in diagnosis in the particular case of which he speaks.

[1] 'Leçons Cliniques,' p. 12.

On reflection, we may even imagine that compression is not always destitute of danger. Without taking into account the embarrassment to respiration, and the pain which it causes, or the excoriations to which it sometimes gives rise, what must it do if ever, by its purely mechanical action, it succeeds in causing a genuine cancer of the breast to disappear? It must be that the molecules of the tumour are repelled into the circulation, and that we have a general infection instead of a local malady. On this supposition alone, ought we not *à priori* to discountenance its employment? In cases of cancer, ought not the object of the practitioner to be to bring the disease towards the external parts, instead of to drive it into the interior? I have seen cancerous tumours disappear to some extent under compression, and the surgeon and the patient both exclaim victory; but, on looking minutely into the case, there was no difficulty in ascertaining that in becoming flattened, the tumour had simply depressed the tissues, and got hidden between two of the ribs. Consequently, a few days after the removal of the bandage, it will, in such instances, reappear still larger and better developed than at first.

I have consequently no hesitation in stating, that we ought not to count upon the efficacy of this measure in the treatment of cancer; if it sometimes be successful, we may feel sure that it is only in cases of innocent engorgement or of non-cancerous tumours.

III.—TREATMENT TO BE FOLLOWED.

Perhaps it may be said that if cancer resists all these remedies singly, we may be more fortunate by associating or combining them together. Tanchou, a practitioner in Paris, took up this argument, and by attacking cancers of the breast with various medicinal agents, general and local, and by appropriating them to each particular case, and changing them according to the indications of each day, he maintained that it was possible either to cure or to render them compatible with prolonged existence. I have seen enough of patients who were treated in this way by Tanchou, either those to whom he called me in himself, or those who consulted me at my own house, to feel quite sure that his hopes had no real foundation. As he had no definite idea of what in the present day we mean by the term cancer, he con-

founded under this head all sorts of tumours and tumefactions of the breast, and the numerous cases, the histories of which we cannot at the present time complete, which he quoted from different authors, can leave no doubt upon the subject.

Does it follow from this, that we ought absolutely to discard medical treatment in cancers of the breast? Such is by no means my meaning. Though nothing has hitherto been able to overcome this frightful disease, we are not the less compelled to oppose it by some remedy, if it be only under the name of a palliative, from the period of its commencement to its termination. Besides, all I have just said only applies to well-marked cancer. Now for practitioners who are not sure of their diagnosis, and during those periods or in those varieties of the disease which leave us still in doubt, there is evidently room for us to apply some kind of treatment.

If the case be one of partial stony scirrhus, of stony scirrhus *en masse*, of pustular scirrhus in plates, disseminated or in one sheet; of encephaloid, epithelial, or melanotic cancer, of chondroid, or fibro-plastic cancer well characterised, we should not build upon any remedy; nothing will be of any use, palliative means alone should be employed. But if the case be one of a tumour the diagnosis of which is uncertain, or of one of those tumours which still seem to hold the middle rank between scirrhus and hypertrophy of the breast; between scirrhus and inflammatory induration of long standing; between lardaceous scirrhus, whether partial or *en masse*, and simple lardaceous indurations, then we ought to employ remedies.

Their employment seems to me so much the more called for in such cases, since I have found treatment bring about the cure of tumours which, at any rate, very much resembled scirrhus, if, indeed, we are to suppose that they were not examples of genuine scirrhus itself.

Doubtful case of scirrhus of the breast, in a lady aged forty-eight years, cured without operation.—Madame D—, æt. 48, the wife of one of my colleagues at the Academy of Sciences, naturally of good constitution, short, and rather stout, still menstruating, consulted me, in 1843, conjointly with M. Michon, whom she had already seen several times, in consequence of disease of the right breast, under which she had laboured for six or eight months. The precise date of the disease could not be stated, for it certainly

was not recent when Madame D— perceived it for the first time. At first sight this lady's breast presented nothing particular; it preserved its natural form and size, only beneath and somewhat on the outer side of the nipple, there was a spot in which the skin was slightly depressed. Examination showed that this mark in the integuments was continuous with a hard semi-stony tumour, the size of a hen's egg, which was ill defined, and appeared as if lost in the midst of the tissues. It was impossible to isolate it from the breast, of which it seemed to form an indurated or degenerated portion. Less and less dense, or more and more supple, in proportion as it was examined away from its centre, which alone had something of the density of scirrhus, it became insensibly lost by layers or radii, which were themselves without fixed limits or distinct mobility. For one or two months the tumour had been the seat of some shooting pain, and latterly had grown more rapidly. Under all the circumstances of the case, M. Michon and myself determined, if only to gain time, to employ active treatment with some degree of energy. Ten leeches were applied to the breast every fortnight, and inunction with iodide of lead ointment, was practised night and morning over the whole of the diseased parts, and at the expiration of a month or two it was also agreed to substitute for the ointment, soap plaster or hemlock plaster. Madame D— took twice a day from forty to sixty centigrammes of the iodide of potassium, and a purge every eight or ten days. Bran, or starch baths, with the addition of the subcarbonate of potash, were administered twice a week. The tumour soon ceased to increase in size; and at the end of two months, had evidently become smaller. The central nucleus diminished by degrees, and the suppleness of the radiated portions augmented in a marked manner. The furrowed aspect of the integuments also gradually disappeared; and, in short, at the end of eight months, the breast had everywhere regained its softness and natural condition; and Madame D—, who is still alive (1853), has never since perceived anything to occasion her uneasiness in the condition of her breast.

During the last fifteen years, I have been so rarely mistaken respecting the nature of scirrhus, that it is difficult for me not to believe that Madame D— really had a scirrhous tumour in the breast; but, on the other hand, it is also so difficult for me to admit the radical cure of cancer without operation, that I

narrate this case here rather as a remarkable circumstance than as an incontestable proof of the fact.

A somewhat stout lady from Bordeaux, fifty-six years of age, came under my care, in the year 1851, for a tumour of the left breast. It had all the characters of radiated scirrhus, the nipple was depressed, and its root surrounded with a reddish excoriation. Three furrows proceeded from it below, and on the outer side. The fingers recognised an ill-defined mass of the size of an egg, irregular, slightly lobulated here and there, especially at the centre, of stony hardness, and of a consistence which insensibly diminished from the central portion to the circumference, where it was completely lost in the mamma. Subjected to the same treatment as the preceding patient, this lady also progressed favorably; and each fortnight I was enabled to recognise a little more elasticity, and a slight diminution in the dimensions of the tumour. By degrees, the nipple rose up, the excoriation surrounding it cicatrized, the mamma gradually became equable, and the patient, who had feared she would be obliged to submit to an operation, returned home, if not completely well, at least, in a condition which permitted us to look forward to a radical cure. I saw her again, in October, 1852, and also in June, 1853, when the recovery seemed to be complete.

Another stout, robust lady, forty-nine years of age, who, in the month of June, 1851, was in precisely the same condition as the preceding patient, also experienced such an amount of improvement, that at the present time there only remains in the outside of her left breast, a little nodule, which seems as if it were lost in the midst of the lobes of the gland.

I could cite other analogous cases, but I consider it useless to multiply the number, because my object in referring to them is less to prove that scirrhous tumours may be cured than to caution practitioners not absolutely to deny the possibility of the fact at the commencement of the disease, and in those forms that I have pointed out.

IV.—ESTIMATION OF CURATIVE MEASURES.

The following is the course of treatment that has inspired me with most confidence. I apply from six to twelve leeches, not upon the breast itself, but on the outside or below it, towards the axilla, and repeat the application every fortnight or

three weeks, or at least once a month, a few days after the menstrual period. Applying the leeches in this situation has seemed to me more efficacious than upon the tumour itself, or upon its circumference.

The diseased part itself is to be covered with soap plaster, which should be renewed twice a week, or with a hemlock plaster, or with a piece of Emplastrum de Vigo, to be changed only every eight days, which may be varied according as they produce more or less irritation, or simply in order not to employ the same application for too long a period.

Instead of plasters, I often prescribe friction with a considerable quantity of the iodide of lead ointment, or with mercurial, or iodide of potassium ointment, in smaller quantity. Mucilaginous baths, rendered alkaline by the addition of the salts of potash, or soda, or a certain quantity of soap, are combined with these first prescriptions.

As internal remedies, I administer the iodide of potassium or cod-liver oil in preference to preparations of hemlock, and the patients thus take from five to ten grains of the iodide of potassium, or two or three spoonfuls of cod-liver oil twice a day, in addition to which, they are purged every week or fortnight, either with magnesia or with castor oil. They ought to discard from their diet, vinegar, salted meats, and spiced dishes. Such is the course of treatment which has seemed to me to have the best effect in tumours of the mamma, where we fear the commencement of cancer.

I should willingly add to this, compression, which has succeeded with me pretty often in cases of non-cancerous engorgement, and in a certain number of tumours which were evidently innocent; but I fear that this remedy is not applicable to genuine cancerous tumours, indeed, as I have already said, I believe it rather dangerous than useful.

The treatment I have just named is suitable not only to tumours of doubtful nature, but to all engorgements, and to all tumours or chronic affections of innocent nature in the breast. It must also be recollected that the employment of such remedies must be subordinate to a number of individual circumstances; such as that all patients cannot take the iodide of potassium, or cod-liver oil, or iodide of starch, or iodized oil, whilst with others there is no such objection. As the treatment, moreover, requires to be long continued, it may be useful to

employ these different remedies in the same patient, one after the other, or alternately.

Purgatives, not being tolerated by everybody, should be prescribed cautiously, after taking into account the state of the stomach and intestines. Preparations of quinine are to be used only in persons of relaxed fibre, or in those whose organic functions require to be stimulated. It is the same thing with bitters in general. Ferruginous preparations have the preference in those whose menstruation is irregular, whose blood is impoverished either from the disease itself, or from hemorrhage. Mineral waters, either taken on the spot or at home, are not to be despised. I have been in the habit, for instance, of ordering either the iodized waters of Chales in lymphatic patients, or those of Bussang, of Châteldon, or of Pougues, to patients who have a chlorotic tendency, or whose digestive functions are disordered; or the waters of Spa or of Forges, if there is anæmia; or the waters of Ems, or of Evian, or of Contrexeville, if there is constipation, and the stomach requires to be regulated. All these waters being rather agreeable than otherwise, may be taken at the meals, either with wine or pure, or diluted with water or milk.

Baths are accessory measures, and must not be neglected. I employ baths with bran, starch or gelatin, in thin, irritable, nervous patients. I add, in others, the subcarbonate of potass or of soda, in the dose of from six ounces and a half to one pound and a quarter to each bath. Aromatic baths, and the baths of Barèges, are also not to be rejected in women of a lymphatic or delicate constitution.

In unquestionable cases of cancer, this treatment is still the best to follow. There is, however, in respect to the diagnosis of tumours of the breast, a distinction to be made between the practitioners *au courant* with science, and practitioners who maintain the old confusion. The latter, more fortunate than the former, employ these various measures in the hope of obtaining genuine cures; whilst the former, knowing how far to trust them, only make use of them as palliatives.

It is nevertheless of importance, not to confound together all forms or stages of cancer. Thus, before ulceration, encephaloid tumours are in a position in every respect for the employment of the treatment the outlines of which I have just drawn. By its means, the progress of the disease is, in

some cases, sensibly checked. Amongst topical applications there is scarcely any, except the iodide of lead, that is then useful; plasters and cataplasms would be, in most cases, more injurious than advisable. The tumour being hardly ever painful, it is useless to use narcotics, either internally or externally.

If the encephaloid cancer be ulcerated, it is often useful to use topical astringents. It is here that lead lotion, Goulard water, the decoction of the leaves of the walnut tree, or solutions of tannin, are advisable; and, as disinfectants, the solution of the nitrate of lead, chlorinated solutions, the decoction of bark, and bark, charcoal, and alum powders. At this stage of the disease, leeches would no longer be suitable, and purgatives and preparations of iodine might be injurious; recourse should rather be had to preparations of opium, of hemlock, of belladonna, or henbane.

Hemorrhage being possible, it may be useful to destroy the bleeding fungosities of the tumour by caustics, or to keep the wound covered with lint, soaked in astringent solutions, at the same time that alum or the ergot of rye are administered internally.

Should the case be one of melanosis, or of chondroid, or fibroplastic tumour, it may be treated like encephaloid cancer, not forgetting the fact, that it is not in the nature of treatment seriously to fetter the progress of the disease, or even in any sensible manner to check the rapidity of its development.

There is nothing in scirrhus to contraindicate the preceding measures. It is, however, in this form of cancer, that leeches applied, as I have said, with hemlock administered internally, and preparations of iodine and resolvent plasters sometimes seem to be useful. It is here also that narcotic preparations may be called for.

Scirrhus *en masse*, whether stony or lardaceous, pustular scirrhus, and scirrhus in plates, or in one mass, are the most intractable forms of all. Leeches and general bleeding should be avoided, except in special cases, as useless, or even injurious. Amongst topical applications there are scarcely any, except the iodide of lead, soap plaster, the ointment of Canet, or Onguent de la Mère, that can be employed. All the others favour rather than prevent ulceration, and the production of pain. Amongst internal remedies, there are scarcely any that we can have recourse to, except sedatives, when the disease is accompanied

by pain; and the only baths then useful, are such, as are either simple or mucilaginous.

When once the different forms of scirrhus are complicated with ulceration, topical resolvent applications cease to be indicated. In such cases, hemlock, aconite, belladonna, henbane, laudanum, black drop, opium, the salts of morphia, the *Sirop de Karabé*,[1] Codeine, the syrup of the white poppy, or the *Sirop Diacode*,[2] are useful, either given by the mouth or in a lavement. As topical remedies, l'onguent de la Mère, and the ointment of Canet,[3] may be employed. Pieces of lint covered with simple or with lead or opium cerate, or with iodide of lead ointment, also sometimes give ease. Linseed meal poultices made with decoction of marsh mallow, or white poppy, or belladonna, or red wine, are also sometimes useful. Here, also, carrot or potato, and other poultices, as well as all applications containing laudanum or creasote, as employed by Græfe, and antiseptic astringent lotions, such

[1 A simple syrup containing the extract of opium.—Ed.]

[2 A simple syrup containing the alcoholic extract of poppy.—Ed.]

[3 The following is the composition of the "*Emplatre de Canet*" (*Onguent de Canet*), or the "*Emplastrum cum Oxido Ferrico*:"

℞ Simple Plaster (Emp. simplex), ℥iv;
Diachylon Plaster with Gum (Emp. diachylum gummatum),[1] ℥iv;
Yellow Wax (Cera flava), ℥iv;
Olive Oil (Oleum olivæ), ℥iv;
Colcothar (Ferri oxidi rubri), ʒiv.

The iron is to be rubbed up with a third part of the oil; the rest of the ingredients to be liquefied with the remaining portion of the oil, and then the whole to be mixed, and rubbed together until the mass is cool.—Ed.]

[1 The *Emplatre Diachylon Gommé* (*Emplastrum Diachylum Gummatum*) is thus made:

℞ Simple Plaster (Emp. simplex), 3lb;
Yellow Wax (Cera flava), ℥iij;
Burgundy Pitch (Pix alba), ℥iij;
Turpentine, ℥iij;
Gum Ammoniac, ℥j;
Bdellium, ℥j;
Galbanum, ℥j;
Sagapenum, ℥j.

Liquefy the simple plaster with the wax, and the pitch with the turpentine; strain and mix the two together; then add the gum previously dissolved in alcohol, and subsequently reduced by distillation and evaporation to the consistence of thick honey. When the plaster is cool enough, it is to be made into rolls.—Ed.]

as I spoke of with reference to ulcerated encephaloid cancer, as well as cabbage leaves, or beet-root leaves, and the grasses in general, formerly considered of great use, are still employed by some practitioners; and I may say as much for applications of lard and other greasy matters, employed by the ancients, who believed that they thereby assuaged the voracity of the cancer.

Such, in truth, is an estimate of the resources that we have against genuine cancer, and when to these measures we join others derived from general treatment, or applicable to exceptional circumstances, and to any intercurrent affections, we have brought almost all the resources of medicine to bear against this terrible affection.

If, however, the insufficiency of curative medications is only too evident, perhaps we may not find it to be the same thing with surgical measures properly so called.

V.—SURGICAL MEASURES.

To destroy a cancerous tumour by surgical means is usually an easy matter, and but little dangerous in itself; but the question arises, whether such a proceeding affords a chance of radically curing the patient. This proposition is still undecided, although it has been discussed since the time of Hippocrates. Cancers, says the father of medicine, should never be extirpated, and his opinion, which seems also to have been that of Celsus, and later on of Mercatus, and of (Trioënus) is strongly maintained by Houpeville;[1] but no one defended the doctrine with such powerful reasoning, as Munro, of Edinburgh, during the past century. It was combated, on the other hand, by almost all the surgeons of past times, by Vacher, by the whole Royal Academy of Medicine and Surgery, by Sabatier, by Deschamps, and it has met with almost universal rejection.

After all, it is not difficult to understand the differences of opinion upon the subject. Persons who did not distinguish innocent from malignant tumours of the mamma, were necessarily led to maintain one or other of these two doctrines, according as their experience in operating had referred to cancerous or to non-cancerous affections. As there are forms of cancer which always reappear, it were enough for a surgeon to have encountered suc-

[1] 'On the Cure of Cancer,' &c., 1696.

cessively a certain number of this species, in order to adopt the opinion of Hippocrates; whilst another practitioner, who had been favoured by fortune, and had fallen in with a series of adenoid tumours for instance, would become convinced that cancers should be extirpated.

At the present time, when we can distinguish innocent from malignant tumours, the question naturally changes its aspect. In association with the characters which I have pointed out, we may withdraw from the category of cancers a multitude of tumours, which may be successfully removed without fear of returning.

§ 1. INDICATIONS AND CONTRA-INDICATIONS.—During the time that must elapse, before the progress of science will enable us still more to contract the circle, it remains to be ascertained, whether real cancer of the breast can be radically cured by operation. Those who maintain the negative, do so upon three grounds: first, from actual experience, then from theory, and in the third place, from the microscopical characters of the disease.

A. *Proofs derived from Observation and Theory.*—Actual observation is invoked, especially by those practitioners of whom M. Cruveilhier is an ardent admirer. According to them, the disease always returns after removal, and operation only accelerates its progress and fatal termination. This also was about the opinion of Boyer,[1] who, out of 100 operations, could enumerate but four in which there was a permanent cure. Scarpa, who met with but three cases of complete success; Mayo, who speaks of ninety-five cases of return in 100 operations; and MacFarlane, who, out of 118 operations, knew not of a single positive cure, have all expressed themselves as strongly as possible on this subject.

This view, however, cannot be the result of rigorous observation. A little reflection will suffice to diminish its value considerably, and to explain its origin and progress. Patients upon whom we operate, consult surgeons in the first instance, and do not apply to physicians until a later period. Those who have been operated upon and cured, have no occasion to go to physicians at all; but those in whom the disease returns, end by seeking assistance from everybody. Now since physicians scarcely

[1] Vol. vii, p. 337.

see any but the latter class of patients, they are naturally struck with the fact, and easily led to the conclusion, that operation is useless. I must apologise to those of my brethren to whom this objection applies; but if they reflect for a moment, they must admit that they are not in a position to form a just estimate of such questions. They will have no difficulty, I hope, in allowing, that as surgeons are naturally called upon to examine tumours of the breast in all possible conditions, at their commencement as well as at their termination, previous to as well as after operation, they alone can possess the necessary data for the solution of this problem; and since they are equally intelligent, equally talented, equally experienced, and possessed of equal powers of judgment and good faith, they must be better judges than physicians, whether operation is, or is not, capable of curing cancer.

Moreover, as a result of their experience, Hill and Flajani entertained an entirely opposite opinion; although the backward state of science, both in a pathological and in a clinical point of view, at the time when they, as well as Munro and Scarpa wrote, prevents our attaching great importance to their views on this subject.

The theoretical reasoning, however, adduced by the antagonists of the operation, has altogether a different value; as it belongs to general pathology, it must have as much weight in medicine as it has in surgery; it must therefore be discussed in the first place, for it is impossible to take a single step without having decided it in one way or the other.

If instead of being a local disease, cancer is the result of a constitutional affection, the extirpation of cancerous tumours must be useless, and ought to be rejected as dangerous.

It cannot be denied, that a vast number of facts and considerations unite to compel us to admit cancer as a constitutional disease. Its origin without appreciable cause; without, in some persons, any known external violence; its dissemination in many situations at once; its development internally at the same time as externally; its existence in the midst of organs, and important viscera, without other disease; the fatality of its evolution; the impossibility of its cure, when once it has become established in any part; its reproduction throughout the organs; its dissemination through the whole economy when it is of long duration, or when its primary manifestations have been destroyed

by surgical measures, can scarcely be explained in any other way; and the memoir of M. Broca, and the work of M. Lebert, add to this subject a number of reasons that are difficult to overcome.

Nevertheless, how can we admit that a patient whose health is perfect, in whom no function is disordered, whose menstruation is natural, whose digestion is good, who sleeps well, whose respiration and circulation are unimpaired, who has all the aspect, all the freshness, all the gaiety, and appearance of a person in good health, can be infected with cancer, merely from this circumstance, that in her breast there is a small scirrhous or encephaloid tumour. How can we suppose that the general health can remain thus perfect, thus entirely unaffected, when in the blood there are the elements of such a mortal disease? And, how can we suppose that this little tumour of so formidable a nature can have been derived from the blood, when the blood is so pure as not to have given rise to any disorder throughout the whole economy in which it circulates? How, moreover, is it, that for so long a period, often for so many years, but one single external tumour has resulted upon the primary infection? Is it the case that tubercnlosis in phthisical patients, that scrofulous disease which depends upon the constitutional state of the patient, limits itself to the formation of a single tubercle in the lungs or elsewhere, or during whole years to a swelling or alteration in a single gland.

The absence of external causes, moreover, is far from being demonstrated. In the first place, it is incontestable, that we more often meet with cancers externally than internally, and that externally it is in those organs most exposed to the action of external agents, that we especially meet with it, as for instance, in the testicles, in the mammæ, in the lips, in the eye, and the orbit. Even internally, it is in the mouth, the pharynx, the œsophagus, at the orifices of the stomach, or anus, in the rectum, at the neck of the bladder, and the neck of the uterus, that it shows itself by preference; wherever, in short, objects from without have to pass or are arrested, and especially in those situations where materials, either alimentary or of any other nature, can produce the greatest irritation, whether chemical or mechanical.

In the third place, how can we be certain that a tumour of the breast, the exact date of which is almost always uncertain, is altogether independent of external violence? Is there an organ

that is more exposed than the breast to be bruised, compressed, or in some way or other injured? Is it really possible for any woman to be positively certain, that her mammæ have never been injured by the whalebone of her stays, or by the strings of her chemise, or the ribbons of her dress, or, in short, by some article or other of her toilet? Who, on the other hand, does not know what occurs in a functional point of view in the female mammæ; that irrespective of gestation, of the puerperal condition, of lactation or marriage, the mammæ become congested at each menstrual period? Why may not these passing perturbations be followed by an exudation which may serve as the origin of a tumour? Who can deny that a little blood, plastic lymph or milk, that has escaped from the natural vessels, may become effused either as infiltration or deposit in the mammæ at certain times, and under certain conditions?

I know that the cause to which these things are attributed by the patients, may only have been a coincidence; that at the time when the blow was received, the tumour may, perhaps, have long been in existence; that, in this respect, patients may deceive, and in fact, frequently do deceive themselves; but it would be imprudent to affirm that they do so always. On the contrary, who has not been struck, bruised, or hurt a hundred times, without at the end of a few months, or even weeks, having the slightest remembrance of it? May it not be, that an induration caused by such violence may not at first be noticed, and that when recognised at a later period, its origin, cause, and date, may be completely forgotten? Does any one believe that a woman, who has sustained some injury to her breast in dressing, or in her household affairs, would, in all cases, remember it at the expiration of six months, if the pain had neither been of long duration nor severe? It may be, that a tumour may arise in this way without the patient suspecting it, and that when she does discover it, at the end of a year for instance, she may find it impossible to state how it originated.

It follows at least from these remarks, that if we are not authorised to maintain that cancers of the breast usually depend on external causes, upon a local exudation into the mammary tissue, we also have no right absolutely to deny that such may be the case.

This difficulty is also met with in the etiology of a great number of other chronic diseases. Who, for instance, has not no-

ticed the swelling of lymphatic glands, whether in the axilla, or under the jaw, or at the anus, consequent on the smallest lesion of the fingers, or of the hand, or of the mouth, or of the head, or of the sexual organs? All practitioners are aware that a decayed tooth, that a pain in the gums, that the smallest scratch, that a leech-bite, a blister, or the slightest alteration in the skin, often affects the ganglionic system. It can only be from want of reflection that any one can be ignorant that the swollen gland occupies the attention of the patient much more than the slight affection that has occasioned it, and which, indeed, had probably been forgotten in a few days after its occurrence, whilst many persons never having paid any regard to the injury, are even very much disposed to deny that they have received one.

The etiology of glandular tumours, to which I in this way directed attention twenty years ago,[1] being indisputable, I do not see why we may not admit it also in the case of cancers.

Every affection from internal causes, which may in the long run produce a local manifestation, indicates its existence in two ways: first, either, as is the case in the cachexiæ, in scurvy in particular, the general health is impaired before the disease becomes manifested in some one particular situation or another: or, on the other hand, the disease is ushered in by a perturbation, the local manifestation of which, in some sense, constitutes only the crisis.

Nothing of this kind can be said respecting cancer. On the contrary, in this affection it is at first an external tumour which serves as the primitive focus of the disease; and it is only subsequent to this, that the rest of the economy commences to be infected. Here we have all the evidences of a taint, of a local disease, which has a tendency to become generalised, and not of an internal affection or disease, which tends to become localized.

So many suppositions can be made; we admit, so many circumstances as capable of giving rise to cancer; its commencement, its progress, and all the phases of the disease, are so easily explicable on the supposition of an external cause, of an origin from without, that it is really impossible to stand out for its being an affection primitively constitutional, and to refer it, as does M. Baumés,[2] to a pre-existing cancerous diathesis.

[1] 'Archives Générales de Médecine,' 1836.

[2] 'Des Diathèses,' &c., 1852, p. 375.

Consequent on some external influence, or on some molecular action, a slight infiltration, an exudation of blood, of albumen, of plastic, or of secretory material, takes place in the structure of some tissue or other; and whether this material escaped from the parts where it naturally exists, forms a mass of certain size, or becomes reduced into smaller masses, is a matter of little consequence, since it acts as a foreign body, and thus is enough to constitute the germ of a disease. Deriving sustenance from the part in which it exists, it by no means remains as inert material. Its vitality, if it has ever ceased, is renewed; new molecules are associated to the primary ones, and thus a tumour may commence its individual existence. This tumour increases in size, and becomes developed at the expense of the surrounding organism; a thousand changes may take place in its form or size, or even in its composition, and all this without its necessarily losing its character as a local disease.

Let us suppose that it has undergone transformations, whatever they may be, such as shall add to its primitive elements, heteromorphous molecules of malignant nature; these molecules, the absolute repose of which is scarcely possible in the economy, must have a strong tendency to pass beyond their primary condition, to become propagated in the neighbourhood, to infect the different animal currents which proceed from them, to invade the lymphatic glands, and at last to spread through the whole constitution, either step by step or by general infection.

Some observers, M. Cruveilhier amongst others, deny that effused blood can ever become so transformed as to constitute organized tumours. No one can estimate the labours of M. Cruveilhier more highly than myself; but I have seen so many tumours which were evidently formed from effused blood, that it is impossible for me to accept his opinion on this point. I have seen uterine polypi formed in some measure under my very eyes, in which the clot of blood was on one side quite recognisable, whilst on the other it had become vascular. I have seen fibrinous concretions adherent to the os uteri, and hanging down in the shape of a little tongue, become covered by degrees with a little pellicle, subsequently become organised, and eventually form a genuine polypus. I have seen similar things occur in the heart, on the mitral or tricuspid valves. I saw a clot of blood in the superior maxilla of a young girl, the transformation of which into an organized

mass was so manifest, that the most practised microscopists discovered in it the cancer-cell.

Up to the year, 1852, I had already, on six occasions, seen large tumours in the substance of the condyles of the femur or tibia, which necessitated amputation of the limb, and which, formed by enormous masses of blood, had supervened upon external violence. These tumours which M. Broca[1] classes amongst cancers, and which he calls fungus hematodes, and in which both he and M. Lebert found abundant cancer-cells, never, however, reappeared in those patients on whom I had performed amputation. In a young lady, Mdlle. P. A— who had in the external condyle of the tibia a pulsating tumour, which might have been taken, and which, in fact, was taken for an aneurism, and whose thigh was amputated in 1838, I found an osseus shell filled with a mass as large as the fist, which had all the aspect of an enormous clot of blood, partially transformed into medullary or cerebriform matter.

A lady, Madame C—, had also a pulsating tumour in one of the condyles of the femur. Ligature of the femoral artery seemed for a time to diminish the pulsations of the tumour, and to bring about its diminution, but did not succeed in curing it; and two years later, in 1842, it became necessary to proceed to amputation of the thigh. As was the case in the patient spoken of above, the osseous cavity which was the seat of the disease, contained a mass the size of the fist, which had all the characters of an old clot of encephaloid appearance. Now, what could these tumours be if not cancers? and how can it be denied that they were almost entirely composed of blood? In another patient, Mdlle. J—, whose thigh I amputated in 1852, for a precisely similar disease, the tumour was so distinctly cancerous, that M. Lebert discovered in it the cell and all the other elements of cancer. We cannot, therefore, disguise from ourselves, that this is a question in pathology, and in the general etiology of tumours, which is yet surrounded with great obscurity.[2]

[1] Op. cit., p. 478.

[2] Some light may, perhaps, be thrown on the cases spoken of by M. Velpeau, by referring to a paper on 'Myeloid and Myelo-cystic Tumours,' which Mr. Grey, of St. George's Hospital, recently presented to the Royal Medical and Chirurgical Society. Surgeons have long been familiar with the fact, that after amputation of an extremity for a disease, which both before and after the operation was supposed to be malignant, the

I have also seen *erectile tumours* become hard, decompose, and assume the characters of cancer; their tissue filled with blood, the exuded material and the primitive elements being perfectly blended together. I have seen tumours apparently melanotic or fungous, commencing in varicose knots, in which the inspissated and indurated blood was so intimately mixed with the venous tissue, that the whole constituted merely an homogeneous ball, in section somewhat analogous to a truffle. Were this the place to do so, I could adduce on this subject an infinity of facts of all kinds, observed since my first publication on the transformation of blood; but it seems to me that I have already said enough to show, that when a lot of blood, a fragment of fibrine, or a lump of any other material has once been effused into the tissues, it may there harden, and form the nucleus, the commencement, the source of different kinds of tumours, and of some cancerous tumours in particular.

I thus find myself compelled to reconsider the question, whether cancer is always malignant in its nature from the commencement, or whether it does not follow, at least sometimes, upon tumours primarily innocent. As respects operation, these different questions are of such vast importance, that I may be pardoned in returning to them several times. The conscience as well as the skill of the surgeon, is deeply involved in them; and humanity forbids our neglecting any means for their solution. If cancer be primarily a local instead of a constitutional disease; if innocent tumours are capable of undergoing the cancerous de-

complaint has not returned; but the patient has remained permanently well. Some of these cases had been subjected to rigorous microscopical examination, and being pronounced cancers, remained in the history of surgery, rather as lucky accidents than as examples of results that might reasonably be anticipated from the removal of malignant tumours. Mr. Grey, from a recent re-examination of three of the cases of this kind, narrated in Sir Benjamin Brodie's work on 'The Diseases of the Joints,' and of six specimens from some of the metropolitan museums, has conclusively shown, that the diseases in question were examples of myeloid and myelo-cystic tumours. This appears to be one of the most important benefits that the microscope has yet conferred on practical surgery; for since these growths very much resemble cancers in their external characters, it is a matter of great moment to be able to distinguish them with accuracy, and thus to have a guarantee of the permanent success of the operation.

From what has come under my own observation, I am inclined to believe, that in cases where the tumour has grown rapidly, there will be found a proportionately larger amount of fibro-plastic tissue and of fibro-plastic cells, mingled with the characteristic myeloid cells; which circumstance appears to supply a link in the chain connecting the fibro-plastic growths of M. Lebert, and the myeloid tumours of Mr. Paget.—Ed.]

generation, the logical and peremptory indication must be to remove these tumours at as early a date as possible; it would be a sort of crime to treat them otherwise, or to give them time to become generalised, or to assume the characters of malignancy.

I have stated before, that without entertaining an absolute conviction as to the possibility of cancerous transformation, I am, nevertheless, far from being as decided as formerly in my opinion as to the negative of the question; as cases have accumulated in my practice, my belief has become more shaken. M. Lebert, as well as M. Broca,[1] do not admit that a non-cancerous tumour can ever become a cancer. According to the former pathologist, cancer is from the first what it ever remains—a distinct species, a distinct entity. It can give rise only to that which is similar to itself, and what is at first foreign to it can never engender it.

In former times I also maintained this opinion, and expressed it in the same way; but as I have grown older, I have witnessed facts which seem irreconcilable with these doctrines. I have seen tumours in the breast become cancerous after preserving their characters of innocence for so long a period, that it is difficult for me, under these circumstances, not to recognise two different phases of the same disease. The case noticed in my practice by M. A. Richard, (see page 428), is most curious in this respect. In fact, almost throughout, the tumour, even under the microscope, was cancerous, although one portion of it, nevertheless, preserved all the characteristics of an adenoid tumour.

M. Richard, it is true, came to the conclusion that in this patient there was at the same time an innocent and a cancerous tumour. But the two tumours constituted but one mass, nothing separated them, and nowhere were they distinct. I have never in the breast seen an adenoid tumour at the same time as a cancer; and, indeed, there seems an incompatibility between these two products, if they are not consequent one upon the other. In the case cited by M. Richard,[2] the tumour was composed of continuous tissue; the innocent part formed merely a portion of the whole mass; there was no accurate demarcation between what was innocent and what was cancerous.

I have seen other similar cases: A woman whom I operated on in February, 1852, afforded a fresh example of the same thing.

[1] Op. cit., pp. 504—511.

[2] 'Revue Médico-Chirurgical,' 1852.

Her tumour, which was the size of the fist, was formed of scattered encephaloid masses, separated here and there by considerable portions of hypertrophied mammary tissue. The cancerous element was infiltrated or effused into the innocent tissue, into the natural organ, which of itself by no means constituted a real tumour.

B. *Proofs furnished by the Microscope.*—Before the intervention of the microscope in the diagnosis of tumours, the intimate structure of cancer had been so little studied, that there were scarcely any grounds on which to make it a consideration as respects operation. The few attempts made by Scarpa[1] on this subject, have no longer any value. Science, I hasten to acknowledge, has, in this respect, undergone a material change. Although maintaining that it would be dangerous to make an operation dependent upon the uncorroborated testimony of the microscope, I am not the less of opinion that we ought to take into account the new sources of information that result from its employment. Does the presence of the cancer-cell in a tumour authorise our stating that this tumour will necessarily return after removal? Does it indicate, in an absolute manner, the existence of a genuine constitutional taint?

As day by day I meet with patients affected with cancer, I am frequently compelled to turn my attention to it, and to make it the subject of deep consideration. Now, I believe that I have already proved that the cancer-cell neither positively indicates the incurability nor the innocence of tumours. We have seen from many observations, from that of M. Richard in particular, how that the cell may escape the attention of the observer, although it may exist in the tumour that is under investigation; in order to be absolutely sure that it does not exist, it is necessary that all portions of the tumour should be successively placed under the microscope.

"A solitary cell being given," inquires M. Lebert,[2] "can we always tell by microscopical examination whether it belongs to a cancer or not? To this question," he says, "we can have no hesitation in replying in the negative."

But supposing we were to say to him, "a morbid tissue being given, can we tell by means of microscopic observation whether

[1] 'Archives Générales de Médecine,' vol. x, p. 283.

[2] 'Maladies Cancéreuses,' p. 16.

it is cancerous or not?" and we shall find him boldly replying in the affirmative.

It results from this, that the most attentive microscopical examination merely enables us to designate as malignant, tumours in which it has recognised the existence of a cancer-cell; but that the absence of this cell does not authorise us to affirm that the disease is not cancerous. The microscope, in this way, leads to the promise of radical cure, in cases in which return of the disease is very probable, and gives to the surgeon a false security; and, further, when even the existence of the cancer-cell has been determined, it does not follow that a cure is absolutely impossible. Numerous observations have long determined my opinion upon this subject.

The young woman (p. 400,) who had in her breast an adenoid tumour, in which was found the cancer-cell, has remained well since the year 1844. Mdlle. D—, on whom I operated in 1843, and, subsequently, in 1845, for an enormous encephaloid mass, filled with cancer-cells, has also remained cured, and is still in good health (1853), notwithstanding her advanced age, her stoutness, the curvature of her spine, her shattered constitution, and the size of her tumours. Nor has there been return of the disease in a young female who had a bloody tumour in the superior maxilla, which was infiltrated with cancer-cells. It would be puerile to dread relapse in the patient, a part of whose heel I removed, and in whom the fungous granulations, nevertheless, contained cancer-cells to a considerable amount, as was affirmed by the most distinguished microscopists. The tumour of Madame D—, who was operated upon in 1847, contained an enormous proportion of cancer-cells; but that has not prevented the patient from being radically cured, and from still enjoying excellent health. Madame de J—, and Madame de L—, whose cases I am about to relate, had also the breast and the axilla filled with encephaloid masses with the most marked characters; and their tumours contained cancer-cells to a considerable amount. Nevertheless, these ladies quickly got well, and have continued so up to the present time.

Case I.—*Lardaceous encephaloid, partially softened, extirpated, and radically cured.*—Madame D—, æt. 55, stout, and of good general health, had a tumour in the right breast, for which she consulted me in the year 1847. This tumour was of the size

of the fist, somewhat prominent, and softened towards the middle portion, that is to say, on the outer side of the breast, and had arisen without known cause; the patient, however, had perceived it two years previously, when it was not larger than a nut, and was indolent in character. Having gradually increased, especially during the last six months, it now occupied the external half of the breast. A prolongation of the same kind existed beneath the pectoralis major, without going so far as the top of the axilla.

After a few days of preparation, I proceeded to the operation, taking care to prolong the incision as far as the axilla, so as to remove at one sweep the whole of the tumour in the breast, and the roots which it sent out. Nothing particular followed from the operation. The wound did not unite by the first intention, but gradually diminished; cicatrization took place slowly but eventually became complete; and Madame D— was able to leave town in June, 1847, two months and a half after the operation. She has been to see me once a year since, and hitherto the cure has remained permanent.

The tumour was formed of homogeneous lardaceous tissue, without septa or distinct cavities, or lobules which could be isolated. Its consistence diminished from the circumference towards the base, where there still remained some lamellæ of cellulo-fibrous tissue as far as the centre. There was also a cavity filled with grayish grumous, semi-purulent matter, mixed with a serous red-coloured fluid. The section of the solid portions of this tumour furnished, on pressure, the characteristic cancer-juice, the milky or creamy fluid of scirrhus or encephaloid; and M. Houel, who examined it in the museum of Pathological Anatomy, recognised in it, as well as myself, all the characters of the best-marked cancer.

Case II.—*Ulcerated encephaloid tumour in a patient seventy years of age; extirpation; recognition of the cancer-cell by the microscope; cure without return.*—The Countess de L—, a tall brunette, who had several children, consulted me in October, 1850. for a tumour which had existed for several years in the left breast. It was extensively ulcerated, occupied a large portion of the mamma, had a hard and lardaceous-like base, and was still moveable over the pectoralis major. The ulcer upon it had deep excavations, and was surrounded with reddish lumps, which were mixed up with the skin, softened in certain places, solid and hard in others. The ulcer was two inches and two fifths

in size, and the subcutaneous base of the tumour was from four inches and four fifths to six inches in its principal dimensions. Under the border of the pectoralis major, near to the axilla, there was also to be found a glandular mass of the size of a walnut, at least so far as the stoutness of the patient enabled me to ascertain.

The adipose tissue was here very abundant, the digestion disordered, the bowels irritable, associated with encephaloid cancer of the best-marked kind, in the most advanced stage, and with retraction towards the axilla; and this, with the considerable age of the patient, who came for advice more from a sense of duty than from any confidence she felt in it formed such a combination, that it would be difficult to get together more unfavorable conditions. Nevertheless, as cachectic symptoms were still wanting, and the disease was absolutely without remedy in any other way, the operation was performed, at Passy, in December, 1850, with the concurrence of M. Cazenave, the physician of Madame de L—, and with the assistance of Dr. Chenu, who was to attend to the after dressings, and of two of my pupils. As regards the breast, I found nothing that had not been anticipated; but the subpectoral tumour was as large as an egg, and in the axilla there existed another not less in size. As these latter were enveloped in a thick bed of soft fat, I removed them more by enucleation than by the knife, and thus there resulted a vast cavern in which the head might almost have been lodged. Nothing particular occurred in the course of the first fortnight; the wound filled up and retracted regularly; but, at the expiration of three weeks, erysipelas showed itself above and below at some distance from its borders. At the end of four days the inflammatory symptoms disappeared on the parts being covered night and morning with mercurial ointment. There was no further interruption to the cicatrization of the wound, but everything proceeded regularly, so as to terminate at the close of the second month.

I have seen Madame de L— on several occasions since; she has become youthful, robust, and gay; the cicatrix of the wound is white and regular; and there is no appearance of return either towards the axilla or towards the breast, or at any other part of the body.

The tumours, on dissection and examined with the naked eye, were composed of a tissue so manifestly encephaloid, that no doubt on the subject could remain on the mind of any one.

Both the masses from the axilla, and those around the ulcer, were fungous, red, vascular, filled with creamy juice, lobulated, and easily crushed under the finger, but elsewhere they were lardaceous, and confounded together with the mammary tissue, which was insensibly mixed up with the normal characters around the principal mass. However, not to neglect any means of certainty, I caused various portions to be examined by MM. Follin and Lebert, who found the cancer-cell in all of them in enormous proportion.

Case III.—*Vast encephaloid fungus, daily discharging a frightful quantity of sanious fluid, in a lady fifty-eight years of age; extirpation; microscopical examination; cure, without return.*—Madame de J—, a lady of patient character, although nervous to a high degree, consulted me, at the commencement of 1850, for a tumour which had been growing for some months previously, on the outside of the left breast towards the axilla. This tumour, of the cause of which she was ignorant, was at that time hardly larger than a nut. I recommended its removal, but the patient declined consent, and I saw no more of her. Having also consulted M. Paul Guersant, who gave her the same advice, Madame de J— remained for some months treating it according to the advice of unprofessional people, but as she did not find the tumour diminish in size, she applied to M. Cruveilhier, who submitted it to the various modes of treatment that are customary in such cases. The tumour rapidly increased in size, by degrees the integuments became destroyed, and soon a mass of reddish gray colour, fungous and bleeding, invaded the whole axillary region. The patient became weaker and weaker, successive hemorrhages produced extreme debility, and, at the time I was again consulted, I found her in the following condition: The pulse was small and at 96; the skin seemed everywhere as if glued to the bones; the digestion had become difficult, and allowed only of her taking very light food. The tumour, however, was still very moveable, and did not seem to have any root below its base, either under the border of the pectoralis major or towards the axilla, but it formed externally a mushroom-like mass the size of both fists, which presented this peculiarity, that such a quantity of sanious discharge of nauseous, disgusting odour, flowed from it, that from ten to fifteen napkins were completely saturated every day. The patient herself, and M. Cruveilhier, who still continued his attendance, assured

me that the amount of this discharge must have been more than a pint every twenty-four hours for the last fortnight.

The patient, her friends, and M. Cruveilhier, earnestly requested the operation, although no success could be expected from it. It seemed to me doubtful whether, in the state in which I then saw Madame de J—, she could bear the operation, or, whether in the extreme degree of development in which the cancer then was, it would not return, supposing the operation happily got over. In spite of these considerations, the operation seemed to be a necessity. The hemorrhage and the abundance of the ichorous discharge, neither allowed us to temporize, nor to count on the continuance of life for more than a few days, and it was therefore decided to perform it the next day. To fill up the measure of misfortune, when we arrived, erysipelas had commenced towards the chest, in that situation where the skin was perpetually sodden by the sanious discharge from the axilla. Nevertheless, we proceeded, and the cancer was removed without etherization, in consequence of the extreme debility of Madame de J—, who, however, supported the tedious and painful operation with rare courage and without fainting. The first twenty-four hours were passed in a state between life and death; but the patient regained a little strength on the second day, notwithstanding the extension of the erysipelas. We administered food,; the colour reappeared in the face; the strength returned by degrees, and Madame de J—, happy that she no longer felt the enormous ulcerating surface that had so long existed at her side, and no longer drained by the immense secretion, regained her strength with a rapidity the more surprising, that the erysipelas spread over the different portions of the chest, belly, and arms, and lasted for nearly twenty days. In short, the wound discharged, diminished by degrees, and finally closed at the end of the eleventh week. Since then, Madame de J—, who has become fresh and strong, is no longer recognisable; the cicatrix confines her arm a little in the movements of elevation, but her mind dwells no more on her old tumour, and there is nothing to make us fear the return of the disease. The morbid mass, both from dissection, and from ocular examination, was found to be made up of cerebriform tissue, of the best-marked kind, one might really say of cerebral pulp. It consisted of grayish red masses confounded together, reduced to a bouillon in some parts, fungous, easily crushed, and containing a vascular network in others.

MM. Follin and Lebert, who examined portions of it under the microscope, determined that it was formed of encephaloid matter.

M. Cruveilhier and myself were in short so certain of the approaching reproduction of the cancer, that we undertook to remove it only with the hope of retarding death for a few days, and of remedying, at least for a short period, a disease which we believed to be incurable. It was, in one word, from necessity, in order that we might not appear to decline to give any assistance in our power; it was an operation *in extremis*, such as one might say would be the operation for strangulated hernia, in the last stage of phthisis, or the amputation of a crushed limb, in a person who was also affected with incurable cancer.

I now adduce a case in support of my opinion, which, I hope, will not be challenged; it was given to me by M. Follin, one of the most distinguished microscopists, and one of the hopes of modern surgery:

Case iv.—*Extirpation of cancer of the breast, without return.*—"Madame P—, æt. 30, previously of tolerably good health, had suffered for a year and a half, when I saw her in May, 1848, from a tumour in the left breast of the size of a hen's egg.

"The parents of this lady had never had tumours in any part of the body. Her father had died from a pulmonary affection at an advanced age; her mother, though very old, is still in good health. Two years ago, after she had been married for some years, she gave birth to a child which she did not nurse; her confinement presented nothing abnormal, and she had neither experienced engorgement nor inflammation of the breast.

"The tumour had appeared without known cause. The patient recollected a blow which she had received on the breast, on turning round in her bed, but these explanations were too little precise to serve as the *rationale* of the affection. The tumour, at first very small, had increased by degrees, and was now the size of a hen's egg. It occupied the lower and external part of the left breast, and had an irregular lobulated appearance. Its firm consistence, and its ill-defined outline, prevented it from being easily isolated from the rest of the breast. It did not roll under the skin like some adenoid tumours, and it was accompanied by shooting pains, occasionally sufficiently severe to prevent the patient's sleeping.

"I removed this tumour on the 4th of July, 1848. It had somewhat increased in size, and the pains were as severe as they had ever been.

"I was assisted in this operation by Dr. Marchal, and by M. Porchat, one of my colleagues at the hospital.

"Nothing particular followed the operation. Cicatrization was complete at the end of a month.

"*Examination of the tumour.*—The tumour, when cut across, displayed a grayish white and very soft tissue, quite comparable in appearance to *gray cerebral substance.* This tissue was easily broken up by the finger, and torn by the scalpel. The surface of the tumour was lobulated, and everywhere surrounded by a tolerably dense fibrous envelope. The general characters of the structure resembled certain varieties of encephaloid. Under the microscope, I looked in vain for glandular lobules. The whole of the tissue was made up of large cells with one or two nuclei, enclosing well-marked nucleoli. M. Robin, who was good enough to give me his assistance in the investigation, also recognised the characteristics of the cancer-cell. The patient was seen again in the year 1853, when nothing particular was found to have occurred since the operation.

"If (adds M. Follin), I were called upon to pronounce an opinion in reference to the return of homologous and heteromorphous tissues, I should say that cancer, fibro-plastic tissue, and cancroid (epithelial) tumours, reappear locally and also generally.

"Formerly, impressed exclusively with the notion of the non-return of fibro-plastic and epithelial tumours, I have of late felt myself compelled to yield to the evidence of facts that have come before me, especially during the last year, at the Hôtel Dieu, where I witnessed the reproduction, in the lung, of a fibrous tumour in the thigh, and where also I have witnessed the return of other fibro-plastic tumours. In short, the microscope has taught us to recognise more perfectly the anatomical elements of tumours that are developed in the system; but we ought to preserve a prudent degree of reserve, when we have to decide the question as to reproduction."

For my own part, I ask no more, and this is precisely what I have accorded to the microscope every day in my clinique for the last ten years.

At the present time, I speak merely of the number of cases in which the evidence of the microscope has been invoked, of the

number of tumours in which the existence of the cancer-cell has been determined, either by M. Lebert, by M. Follin, or by M. Robin, or simultaneously by these three microscopists; and I conclude that the presence of the cancer-cell does not authorise us to affirm that a tumour is absolutely incurable, or that it will necessarily return after operation.[1]

[1 The length of time that may elapse before the reappearance of cancerous disease in a part which has been the seat of operation is sometimes surprising, and throws great difficulties in the way of accepting the instances, referred to by M. Velpeau, as examples of definite cures. The following remarkable case, illustrating both this point and the hereditary nature of the affection, presented itself at the Middlesex Hospital:

Sarah Hillier, æt. 47, a married woman, the mother of four children, healthy, and of spare habit, applied to Mr. Arnott, in December, 1846, for the removal of a tumour, which had been perceived in her left breast four weeks previously. Her attention had been called to the part by a sensation like the sting of a flea; and influenced by the example of what had befallen other members of her family, who had suffered from cancer, she determined to have the swelling which she had discovered, taken away with as little delay as possible. Mr. Arnott acceded to her request, and removed the whole mamma. The tumour was about the size of the last joint of the thumb, and situated around the nipple, which, however, was not in the least retracted. She left the hospital in less than three weeks, with the wound cicatrized. The mass which had been removed was an example of genuine stony cancer.

In 1850, she was seen again, when the cicatrix was found to be perfect, and the axillary glands healthy.

In April of the present year, 1856, she once more consulted Mr. Arnott, having a return of the disease in the cicatrix, and some swelling of the axillary glands. She had only discovered this three months before, having in the interval between the previous operation and the present time enjoyed perfectly good health. At the axillary border of the cicatrix was a hard tumour, of about the size of a small pigeon's egg, adherent to the integument, though free over the surface of the chest. In the axilla, and above the clavicle, were some enlarged but not indurated glands, having no apparent communication with the principal tumour.

On the 3d of April, this lump, together with four axillary glands, was extirpated by Mr. Shaw, who took charge of the patient; and both to the naked eye, and under the microscope, the whole was found to be made up of well-marked, somewhat soft scirrhus. The hereditary nature of the disease in this patient is very remarkable.

Her mother died of open ulcerated cancer in the breast, which had not been operated upon; and out of a family of six sisters, only one has escaped the disease. Previous to 1846, when the disease commenced in this patient, she had lost her mother and two sisters from cancer, for which they had undergone no operation. Another sister had been operated on for a similar disease in 1844, and remained well until twelve months ago, a period of eleven years, when she had to submit to a fresh operation, but since that time has continued well.

Another sister has also died since the year 1846, from the immediate effects of the operation. Thus, the disease has recurred in two of the sisters, after intervals respectively of eleven and ten years, and in a family of seven females, all but one have suffered from cancer of the mamma.—Ed.]

The intervention of the microscope, moreover, is not at all necessary, to decide whether such and such a tumour, which has been removed, is, or is not, of cancerous nature. If we put innocent tumours on one side, and malignant on the other, I do not hesitate to affirm that, by the aid of clinical knowledge, which I have for so long a period endeavoured to diffuse, an experienced practitioner will without trouble distinguish a cancerous tumour from one that is not so. On this subject, I would willingly appeal to the microscopists themselves, and in particular to the most experienced of them, to MM. Lebert and Follin, both of whom have followed my practice for some years. Have they not a hundred times seen me, at the hospital, make the diagnosis of tumours, and maintain, both before and after the operation, that such and such a tumour was innocent in nature, and such and such an one malignant; and what has their microscope ever done, but confirm what I had previously announced? When I have positively asserted the fact, have they ever seen me mistaken? Difficulty in the diagnosis is hardly possible, except at the outset of the disease, for at a later period, doubtful cases are rare. Then if an experienced clinical observer hesitates, the evidence furnished by the microscope is by no means in itself of a nature either to reassure or to throw doubt on the operation.

In fact, the microscope and the cancer-cell have as yet furnished nothing incontestable enough to serve for the groundwork of the determination of the surgeon, when the question arises as to the extirpation or not of tumours of the mamma. What up to this time may be admitted is, that the presence of the so-called cancer-cell in a tumour which in other respects has the characters of cancer, is a fact which increases the fear of return after operation; and, in like manner, its absence is reassuring, if the extirpated tumour belongs in its other characters to the class of innocent growths.

c. *Clinical Facts.*—The antagonists of the operation also appeal to the results of clinical facts, and to direct observation. According to them, operation never succeeds in effecting a cure, and often abridges instead of prolonging life; it has the inconvenience of increasing the activity of the disease, of giving rise to new tumours, which otherwise would not have appeared, and the development and growth of which is often more rapid than was the progress of the primary tumour.

Statistics have been quoted in support of this reasoning. M. Leroy d'Etiolles,[1] amongst others, having got together 2781 cases, communicated to him by 174 French practitioners, found that out of 1192 patients who were not operated upon, 18 lived more than thirty years, and that the existence of the others was prolonged for two, four, six, ten, twenty, and twenty-five years. When it had attained a certain degree of development, the disease became stationary and indolent. Out of 804 females who were operated upon, only 4 survived for about thirty years; 15, for rather more than twenty years; and 88, from six to twenty years; which circumstance, says the author, tends to show that the operation is rather injurious than useful.

Whoever is aware of the difficulty of framing good statistics, must acknowledge that such as have hitherto been got together on the subject of cancer, those of M. Leroy as well as those of Monro, &c., are destitute of value. During nearly forty years that I have frequented the hospitals, or practised surgery, I have certainly seen more than 1000 cases of tumours of the breast. It is certain, however, that I have only been able to trace a very small number to the end. There is a large proportion of them, both public and private, which were seen only on one or two occasions. This no doubt was sufficient to enable me to make my diagnosis; but if it were necessary for me to say precisely what became of these tumours, how long the patients might have lived, or what had happened to them after the operation, I evidently could not do so. The same difficulty existed in those cases in which I have had to perform an operation. When once the tumour has been removed, and the wound has cicatrized, the surgeon and patient readily lose sight of each other. Many of mine came from the country for the operation, and returned when it was completed. Some, in fact, did not reside or remain in France, and those who lived in Paris it was not always easy to see again.

In a large capital, in which the population is constantly changing, and in which the relative position of people is subject to so much mutation, the surgeon easily loses all traces of such patients. At the hospital, the difficulty is still greater. The patients who come from all quarters and corners of France and Paris, go away soon after their cure, and are never seen again by the

[1] 'Bulletin de l'Académie de Méd.,' vol. ix, pp. 454—458.

surgeon who has operated on them, especially if the cure has remained permanent.

Who will dare to assert the radical cure of a cancer, solely because the patient, who at first continues well, ceases to correspond with the operator. If it be true, that patients in whom a reproduction of the disease takes place, rarely fail to return for the advice of their surgeon, it is equally certain that many, discontented with the results of the operation, apply to somebody else. How then, from such data, are we to construct statistics which would be of any use? This, nevertheless, is the position of all surgeons.

If, on the other hand, we pay attention to the want of precision in the diagnosis of diseases of the breast, to the confusion which still exists in the minds of almost all physicians and surgeons on this subject, we can understand that evidence obtained from so many different sources can be of no value in the question at issue, either for or against the operation.

For my own part, I have operated upon a large number of patients who have remained cured, but it would be impossible for me to state, with certainty, in what proportion. I have lost sight, at the end of one, two, three, six, or ten months, of a great number of those who seemed to me likely to remain definitely well. As for those whom I could trace at the end of a certain number of years, and with whom I am still in communication, it may, perhaps, be objected, that as scientific knowledge, at the period of their occurrence, was imperfect, and as the aid of the microscope was not invoked, I, like others, might have been mistaken, and have supposed tumours to be cancers which were in reality innocent.

It is impossible for me to acknowledge the validity of such a plea. For more than thirty years, I have endeavoured to distinguish cancerous tumours of the breast from those which were not so; and for upwards of twenty years, I have had sufficient practice in diagnosis to feel certain of not confounding malignant with innocent tumours in those cases in which the question of operation arose.

A. *Observation.*—Such a confusion besides is not supposable, except in the case of tumours with vague, uncertain, or ill-determined characters, and it is by no means of such that I speak, when referring to the removal of genuine cancers. A well-marked

cancer, either in the form of encephaloid or in that of scirrhus, is so easily diagnosed, both before and after the operation, that, for my own part, I have never had occasion, and no surgeon who attends to the observations that I have laid down, need ever have occasion, to resort to the microscope, in order to be in a position to affirm whether the case be really one of cancer. In this manner, to set on one side as incomplete and valueless, anterior observations, because the microscope was not consulted, is an assumption that I feel bound energetically to repel; for thus to recoin science on every occasion that a man may think he has discovered a new element in pathology, is too dangerous an ambition not to be combated in its birth. It is not because the microscope was not employed that old observations are often valueless, for from the descriptions given it is generally easy to see whether the case was one of cancer or of some other disease. It is because the cases often consisted of mere assertions; because they showed that their authors were incapable of distinguishing an innocent from a malignant tumour, either in the breast or elsewhere. Their little value depends especially also on the fact, that the patients were lost sight of too shortly after the operation.

Notwithstanding all this, it is, however, certain, that a considerable number of the facts scattered about in different works, unquestionably show that the patients were radically cured of genuine cancer; and for my own share, I possess more than twenty perfectly reliable examples of the kind, without speaking of those which I lost sight of, and which, without being positive, were at any rate extremely probable. The following is an abridged account of some cases, the correctness of which I have recently been enabled to verify.

Case I.—*Softened scirrhus in the left breast of a woman, aged forty-four; extirpation; microscopical examination; radical cure.*—Madame M—, a trustworthy person, of short stature, and somewhat stout, generally in good health, still menstruating, and never having had a child, consulted me, in the year 1847, for a tumour of long standing in the left mamma.

The tumour, which was attributed to a blow, was first perceived by the patient five years previously, and had been developed slowly. When I first saw it, it was as large as a hen's egg, and for about six months past, had been the seat of some pain. It was situated above and to the outside of the nipple, and ap-

peared like an ovoid mass, mixed up with the structures of the breast; it was adherent at the centre to the skin, which was here thinned and somewhat red; but it was hard, and as if lardaceous at the circumference; firmer and stony in the greater part of its bulk, and the seat of slight fluctuation at the centre. There was nothing abnormal in the axilla. After some days of preparation, the whole mass was removed, together with a certain thickness of the surrounding structures. The wound which was brought together by strips of plaster, continued to discharge for a month, but had completely healed in six weeks. Since then there has been no return of the disease, and the patient remains in excellent health. The morbid structure was slightly pulpy about the centre of its cutaneous surface, but in all other portions it exhibited the consistence and other characters of scirrhus. Its section, of a dull gray colour, gave exit, on pressure, to a considerable quantity of milky cancerous juice. Its circumference, which was less dense, and less markedly fibrous, became insensibly lost amidst the healthy structures.

M. Follin, who assisted at the operation, instituted a microscopical examination of the tumour, and recognised in it a considerable number of cancer-cells.

Case II.—*Non-ulcerated scirrhus of the left breast; extirpation; radical cure.*—Madame G—, æt. 46, naturally thin and delicate, without being absolutely in bad health, consulted me, in the year 1841, for a tumour as large as a hen's egg, somewhat elongated, which was situated in the external and inferior half of the right mamma. She had borne several children, and was still menstruating; the origin of the tumour was unknown. It was hard, rough rather than lumpy, and evidently mixed up with the mammary tissue; below, and on the outer side, the skin which was adherent to it had commenced to become wrinkled and puckered. There was no swelling in the axilla. The operation was performed with the concurrence of Dr. Baron, the attendant of the family, and presented no particular feature. I have seen Madame G— on several occasions since then, and the last time in 1853, but there has been no return of the disease.

The morbid structure had all the characters of stony cancer, the central part of which was lardaceous, and rather less hard than the circumference. It was somewhat softened in a spot of about two fifths of an inch in extent, on the outer side, where the

skin was confounded with it. Its hardness, the stencillated brownish or grayish aspect of its section, the semi-creamy, yellowish juice which exuded on pressure, or could be removed by scraping with the knife, and its continuity without appreciable line of demarcation, with the glandular and fibro-cellular tissues of the part, could leave no doubt on any one's mind as to its cancerous nature.

Case III.—*Retracted stony scirrhus in a woman, aged seventy; extirpation; radical cure.*—Mdlle. M—, æt. 70, a lady of short stature, with a curved spine, and of broken health, consulted me in the year 1837, for a tumour in the left mamma of five years' standing. The tumour, which was at first small and moveable, had grown insensibly, but when I saw it appeared as a patch of nearly four inches in transverse diameter, and of from two inches to two inches and one fifth from above downwards. Its greatest thickness was about one inch and one fifth of an inch. It was ulcerated below, and in this situation seemed as if hidden beneath and on the outer side of the mamma. It was reddish gray in colour, dry, slightly lobular or irregular, and the borders of the ulcer were excavated, but not to any great extent. The whole mass was hard, stony, and adherent to the integuments in front. Its circumference was lost amidst the normal structures of the part. There were two small glands, the size of hazel nuts, towards the axilla, beneath the border of the pectoralis major muscle.

I thought it right to proceed to the removal of the tumour, notwithstanding the age and bad constitution of the patient, and the condition of the local disease, but previously remarked that the operation afforded but slight hopes of success. Although obliged to take away a considerable portion of the integuments in the neighbourhood of the tumour, I was enabled to bring the edges of the wound together, so as not to leave a wound of more than about one inch and one fifth in extent. There was no unpleasant symptom after the operation; cicatrization proceeded slowly; but at the end of two months and a half, Madame M— was perfectly well, to the great astonishment of everybody.

The tumour presented all the characters of the best-marked scirrhus; its structure was hard, inextensible, homogeneous, cupped on section, of a brownish gray colour, studded with white, furnishing a reddish juice from the central portion, and continuous by radii with the glandular or cellular tissue of the circumference.

The lady survived for a period of nine years after the operation, and died of a cerebral affection which had no connexion with her former cancerous complaint.

Case iv.—*Ulcerated encephaloid tumour, in a female of forty years of age; extirpation; permanent cure.*—Madame L—, having been confined several times and still menstruating, the wife of a butcher, in the Rue de Sèvres, sent for me, in the year 1834, for a somewhat conical tumour in the right mamma, of the size of a child's head, which occupied the whole extent of the breast, and presented enormous lumps, some of which were adherent to the skin, which was red and softened. Some of the lumps were extensively ulcerated, and expanded into fungous mushroom-like masses. It was moveable on the surface of the chest, but the skin was free and unaffected only towards its base; in all other situations it was mixed up with the natural tissues of the part. Its consistence was tolerably firm towards the circumference, and in the more homogeneous portions of the mass; but it was fungous, soft, and as if fluctuating in its principal lumps. A foul, ichorous, bloody discharge flowed from the ulcerated fungous growths. For some days past there had been hemorrhage, which threatened to become dangerous, and portions of the medullary structures, brought away in the dressings, were replaced by fresh vegetations. There were no enlarged glands in the axilla, nor under the edge of the pectoralis major, and the general health was not much deteriorated. I removed the whole mass some days subsequently, with the concurrence of M. Thirial. As it was necessary to sacrifice a large portion of the skin, it was impossible to bring the lips of the wound together, and to attempt union by the first intention. It was two months before the patient recovered from the operation; but since then, up to the year 1853, when I last saw her, she has continued perfectly well.

The tumour was composed at its base, and here and there in other portions of its extent, of a lardaceous, gray, yellow or reddish tissue, amongst which could be recognised fat, indurated cellular tissue, and remnants of the breast flattened and altered in shape. Elsewhere, there were lumps, both separated from each other and confounded together, some of which were still solid and difficult to break down under the finger, whilst others exactly resembled cerebral substance; some of the lobules were as thin

as bouillon, and of a reddish gray colour. The milky or semi-purulent juice, characteristic of encephaloid matter, flowed out in abundance on pressure, and almost throughout could be observed the thready tissue of encephaloid. In short, it would be impossible to meet with an encephaloid or cerebriform mass, with a fungous cancer better characterised than was this one; and in no case of cancer could the diagnosis be more certain than it was in this instance.

Case v.—*Scirrhus with enlarged glands in the axilla; extirpation; cure.*—A female, æt. 58, was admitted into the Hôpital des Cliniques, on the 10th June, 1826, with a tumour in the left breast of about eighteen months' duration. It was as large as the fist, very hard, adherent to the skin, elongated transversely, accompanied with frequent shooting pains, and had grown without evident cause. There were sundry small, round, and moveable tumours, forming a sort of chain, which followed the direction of the inferior border of the pectoralis major muscle as far as the axilla; some enlarged glands were discoverable above the corresponding clavicle. This complication, which had dismayed several surgeons, did not, however, deter M. Roux, who, encouraged by the entreaties and the good constitution of the patient, performed the extirpation of the tumour, and of all the axillary glands, on the 18th June. The extent of the wound, and the inextensibility of the skin, prevented any hope of immediate union.

No constitutional disturbance followed; cicatrization had proceeded to a considerable extent by the 30th June, and was almost complete on the 6th July. The patient took cold on the 8th, and this for a short time interfered with her progress, but by the 20th, her recovery was complete. The supra-clavicular glands disappeared; and, at the present time, 15th November, 1853, the patient continues perfectly well. The axillary tumours were glands transformed into lardaceous tissue, mixed with very firm caseous material; that in the breast, which was made up of the degenerated mamma, and was continuous with the neighbouring structures, bore some resemblance to fibrous tissue, combined with true scirrhus. Its boundaries were, however, very distinct, and no trace of indurated cellular tissue was met with in its circumference.

Such, then, are cases in which, like those spoken of in former chapters, in a multitude of women operated on for tumours, the cancerous nature of which admitted of no doubt, the cure has continued permanent, for twenty, fifteen, twelve, six, and four years.

If, now, the cancerous tumour be merely the physical manifestation of a general constitutional taint, how can we explain the return to health, the at least temporary cure, which so often succeeds operation, and during which debilitated, emaciated women, whose appearance has become extensively altered under the influence of their local malady, so rapidly regain their strength, their embonpoint, their colour, their freshness, and a marvellous degree of health? If the whole economy had been primitively affected, the cure of the external disease would not suffice to improve the general condition. This cure, although temporary, this return to the highest state of health after the amputation of many cancers of the breast, is, nevertheless, a fact of frequent occurrence.

When reproduction does take place, is it not, at least, eighteen times out of twenty, in the form of little tumours in the neighbourhood of the cicatrix or wound? What reason have we to attribute this reproduction to an eccentric effort of the economy, rather than to germs from the expansion of the tumour itself, which have become scattered in different ways in the organic system, of which the tumour constitutes the centre?

From all these difficulties and doubts, and from a number of other remarks which could be easily accumulated here, it results, in my opinion: 1st, that no plausible reason has been given in favour of cancer being primarily a constitutional disease; 2d, that, on the contrary, we ought rather to admit that it belongs to the class of affections of primarily local origin; 3d, that certain innocent tumours seem in some cases to undergo malignant transformation; 4th, that innocent or malignant tumours, adenoid, and also cancerous tumours of the breast, are *probably* due to a plastic, a sanguineous or scerctory exudation into the normal tissues, either spontaneous or from external violence; 5th, that neither the presence nor the non-existence of the cancer-cell in tumours, affords by any means an incontestable proof that the disease will or will not return after operation; 6th, that it would consequently be unwise to come to a decision, either in favour of or against an operation solely from the

evidence of the microscope; 7th, that observation and statistics are far from proving that the extirpation of tumours of the breast is always followed by a return of the disease, and always useless or even injurious; 8th, finally, that numerous facts and observations, derived from my own practice, demonstrate, without the smallest question, the possibility of a radical cure after operation, even in the best-marked forms of cancer.

B. *Forms of Cancer.*—It is not, however, intended to assert that we may hope for the radical cure of all varieties of cancers by operation. Extensive experience, on the contrary, has shown me that certain forms, that cancers in certain stages, and that cancer accompanied by certain signs, will invariably, or almost invariably, return.

Thus, scirrhus in plates, whether scattered or in one mass (*en cuirasse*), should never be submitted to operation. Even at the commencement, and when there is but a single plate, operation will never cure the patient, for the disease invariably returns, and usually with great rapidity. The same must be said of tubercular pustular cancer, whether discrete or confluent. I am persuaded that cancers of this kind have never been cured by operation.

Stony scirrhus *en masse*, and diffused lardaceous scirrhus, stand in precisely the same position. I made this observation more than thirty years ago. Even when the integuments are yet unaffected, these species of cancer invariably return, and no more yield to the knife than to any other plan of treatment.

Whenever the scirrhous mass and the skin are confounded together in a diffused form, when the scirrhus is rather protuberant than depressed, and the tegumentary degeneration has no appreciable limit, and the whole mamma is more or less thickened, there is also nothing to be hoped for from the operation. Even when it is possible to remove with certainty all the diseased parts, when even there is no appearance of a tumour, either in the axilla, or under the border of the pectoralis major, or on the clavicle, or around the principal diseased mass, we may still be assured that the disease will return.

Experience, also, enables us to affirm still more broadly that every cancer, whether in the form of scirrhus or of encephaloid, which presents itself with the aspect of a diffused or disseminated tumour, will infallibly return after operation. I may say on this

subject, respecting cancer, what I have remarked respecting gangrene; when the affection is not localised, when it continues to extend either by successive encroachments, or as one lump, amidst the integuments or in the gland, operation will never arrest its development, or succeed in curing the patient.

I have frequently removed these different varieties of cancers. For a long period I had no other rule respecting them, than the possibility or impossibility of removing all parts that were evidently diseased. When the integuments were confounded with the tumour, I nevertheless performed the operation at the risk of being obliged to borrow healthy structures from the neighbouring tissues, in order to cover the wound. If the scirrhous pustules were not too numerous, or too much separated from each other, I removed them one by one or together in one slice of the skin or the breast, and I pursued the same course with stony patches of the integuments. Neither did the existence of enlarged axillary glands or subpectoral tumours deter me in these different circumstances; and it is because I have tried it in many cases that I have ended by renouncing the operation, and by recommending the young surgeon on no account to operate on such tumours.

We must distinguish on this subject, also, and that carefully, partial stony scirrhus with retraction of the nipple, or with puckering of the skin, or even radiated scirrhus, from stony scirrhus *en masse*, or from diffused lardaceous scirrhus, complicated with tubercular scirrhus, or with scattered scirrhous patches. In these last varieties, the operation ought to be absolutely declined, even when there is nothing in the axilla, and when it would be both possible and easy to remove the whole of the degenerated parts. If Boyer's[1] denunciation of the operation referred merely to this class of tumours, instead of including cancers generally, I should join in it. M. Vidal also,[2] in affirming that in genuine cancer the return of the disease is almost inevitable, is only justified as respects the forms spoken of above.

In the other varieties, on the contrary, if the boundaries of the disease are evident, and the degenerated glands under the pectoralis major, or on the side of the axilla, are still moveable, and if, in short, it does not seem to be too difficult to remove all the tumours with certainty, the operation is permissible, affords some chance of success, and should be performed. Whether an

[1] Op. cit., p. 238. [2] Vol. iii, 3d edit., p. 806.

encephaloid cancer be ulcerated or not, if the tumour be still intact, or if it be flattened externally like a mushroom, and whether it be moveable or not amidst the tissues, extirpation is indicated so long as there is no cancerous tumour elsewhere, either in the form of a tubercle, or of a mass in the neighbourhood, and when the general health of the patient affords no proof of cachexia or of internal disease.

The operation ought not to be rejected because there may be swelling upon the clavicle, along the neck, or in any other more distant part. It ought, however, to be renounced, if the axilla be filled either with disseminated glands, or with masses situated deeply under the clavicle, or amidst the pectoral muscles.

In short, extirpation ought to be the rule, notwithstanding the naturally refractory nature of cancer, when the whole of the external tumour or tumours can be removed without too much difficulty or danger; but it ought, on the contrary, to be rejected in those instances where the reverse of these conditions is present. Thus taught by clinical experience, I feel it my duty to dissuade from the operation so large a number of patients, that of those who come to me each year, at the public consultation or at the hospital, I decline to operate upon a number almost equal to that which I consider it right to submit to this treatment. In fifty-two cases of encephaloid cancer, I declined the operation in fourteen; and in 183 cases of scirrhus, I recommended fifty-four patients not to undergo any operation. At home, and in my private practice, I certainly meet with at least fifty cases of this character every year. A large number of these patients are operated upon by other surgeons, more bold or confident than myself; but in all cases where I have been able to follow out their history, I have learned either that they died from the effects of the operation, or that the cancer was speedily reproduced.

Scirrhous and lardaceous encephaloid tumours are somewhat deceptive in this respect. They are said to be exactly limited. It is easy to practise their total removal. Young, but very competent surgeons, and even men of large experience, who have not regarded the question from the same point of view as myself, are easily mistaken, and daily fall into this snare. When patients with such tumours come to consult me, either at the hospital or in private practice, whether alone or in consultation with other practitioners, I recommend no operation, and advise them never

to submit to any. Either personally or through their families or friends, they apply to other practitioners who advise and practice the operation. At first, all goes on well, the wound diminishes and even cicatrizes; victory appears to be certain; but neither the unfortunate patient nor the surgeon long enjoy their good luck. The cancer speedily reappears, either around the cicatrix, or in the axilla, or above or below the clavicle.

From this moment, regret assumes the place of satisfaction; and I know nothing more cruel, nothing more frightful, than the spectacle of unfortunate patients who have been operated upon, and in whom the cancer has become reproduced. To see them day by day, and week by week, and not to know what to say, by what expressions to give them consolation, what drugs to recommend to give them patience, what aspect or countenance to assume, to hide from them the despair with which we are filled, is genuine martyrdom.

It is necessary to have grown old in practice, and more than once to have been placed under these painful circumstances, in order to feel all the importance of not practising the extirpation of cancerous tumours, excepting when there is some chance of radically curing the patient, and of preventing the return of the disease.

It is in such cases especially that we have to look forward to the morrow. A sufficient number of cancers, which seemed to afford some chance of a radical cure, reappear after extirpation, without our adding to them others whose appearance enables us to say previously that they will invariably return.

It is not because a cancer is ulcerated, or of long standing, or fungous, or painful, or of large size, or very extended, that we must set aside all idea of operation, but because it is of such or such a nature, or rather of such or such a form. I have operated upon extensively ulcerated encephaloid tumours, upon enormous sanious mushroom-like masses, which have never been reproduced; and I have witnessed the return of the disease after the ablation of encephaloid tumours, which were still small and covered with sound integument. I have seen the disease reproduced after the removal of small indolent scirrhus, still concealed under the skin; and on the other hand, I have witnessed a radical cure follow the extirpation of scirrhous cancer which was extensively excavated by ulceration. I cannot too often repeat, that it is the nature and the form of the cancer which is to guide us in judging of those cases in

which the operation may be resorted to, and by no means the other characters of the disease.

I have remarked that tumours of scirrhous, and especially of encephaloid nature, which have been rapidly developed, and to which we might give the title of acute cancers, return with terrible obstinacy. There are some which, in the space of a few months, attain the size of an egg, or of the fist, often without the patient entertaining any suspicion of their existence, and rapidly give rise to tumours of the same kind either in the axilla, or under the pectoralis major, or even in the opposite mamma. These tumours, almost all of which belong to the class of diffused scirrhus or encephaloid *en masse,* are of the most terrible kind. Without operation they rapidly destroy, and operation in no way arrests their development and progress, which is in some sense galloping, and in this respect admits of their comparison with what is called acute phthisis. It is because I have been aware of this unfortunate circumstance on many occasions, that for more than ten years I have ceased to operate upon them.

If we desire to enumerate those contra-indications which are apart from the nature or the form merely of the tumour, there still remain a great number. Whenever the cancer, of whatever species, cannot be destroyed without the removal of a large portion of the integuments, it is better not to touch it, for the operation will not succeed. If the tumour be adherent to the ribs, or if, still more peremptorily, some of the ribs are comprised in the cancer, it would be something more than temerity, it would be barbarity to attempt the extirpation, and it is difficult for us in the present day to understand the sort of celebrity which in 1818 attached for a moment to the name of Richerand on the occasion of an operation of this kind. It is certain, that before involving the rib the cancer has become generalised, that whether the operation succeed as an operation or not, the disease will return; and as the proceeding, under these circumstances, besides being extremely difficult, and requiring a great amount of surgical talent, is also extremely dangerous, since it may lead to opening the cavity of the pleura, a person must have a great itch *(prurigo secandi)* for operations, who decides on performing such an one.

c.—A more embarrassing complication arises from the existence of enlarged glands in the axilla. Cancerous tumours are so often

reproduced, even when they are isolated and single, and when we are able to remove with them a layer of perfectly sound tissue, that there can be little chance of obtaining a radical cure when secondary tumours are developed in the neighbourhood. We may, it is true, at one operation extirpate all the glands, or degenerated masses, which occupy the subpectoral region or the cavity of the axilla; but who can be certain that no germ of a similar tumour, that no degenerated lymphatic gland, has escaped the knife.

If the lymphatic system is so charged with the cancer germs, as to convey them to a considerable distance, how can we be certain that there is no trace of them beyond those which our senses have enabled us to recognise? How can we be sure that there is not in the neighbourhood some molecule of cancer which has become aberrant? Were not all the tumours that we do perceive, at first so small that it would have been impossible for the most attentive observer to have ascertained their existence? By what sign can we recognise a cancer the size of a pin's head, and yet who can doubt that a number of cancerous tumours have grown from a still smaller commencement? It is enough, then, to reflect for an instant, in order to become convinced that the presence of ganglionic enlargement in the axilla is an unfortunate condition. Nevertheless, the contra-indication is not absolute. Many surgeons narrate examples of success even when they have been obliged to go as high as the summit of the axilla. Some have succeeded in spite of the presence of glands above the clavicle.

It is important that I should explain myself on this point. In the first place, there is no proof that all the extirpated tumours were really cancers. It is allowable to suppose that, in some women at least, the cases were only of innocent tumours. Another question, and a serious one for general pathology, is moreover raised by this class of facts. It is not impossible that in a woman with cancer of the breast, glandular tumours from simple hypertrophy, or from ordinary inflammation, may either arise or be pre-existent in the axilla, or in the sub-clavicular space.

Again, cancerous tumours grow in the neighbouring glands in two different ways. 1st. By throwing some of their molecules into the lymphatic system; a cancer thus transported necessarily gives rise to tumours of the same kind. 2d. On the other hand, it may be that the glands have swollen, from the irritation that

the cancer sets up in the mamma, as they do in any other morbid condition, or from any other irritation of innocent nature.

It is easy enough to understand, that in the last case, the coincidence of such tumours will not interfere with the complete success of the operation. I have often seen such swellings diminish in a marked manner before the operation, under the repeated application of leeches, or of topical remedies, either emollient or resolvent. I have also, however, in a few cases only, seen the lymphatic glands of the axilla subside after the operation, under the same kind of treatment. In short, as has been shown above, patients who had concomitant tumours in the axilla, which it was necessary to remove, and which were most positively cancerous, nevertheless remained radically well.

Without, therefore, being a formal contra-indication, the presence of enlarged axillary glands renders the success of extirpation of cancers of the breast extremely doubtful. We should not, therefore, when this has taken place, decide on the operation, except when all other favorable conditions co-exist.

D. *Sexual Organs.*—It is well, also, to know what is the condition of the sexual organs. After the mamma, the womb, as is well known, is most frequently affected with cancer. It is clear that we ought to renounce the idea of any curative operation as regards the breast, when the patient is at the same time affected with cancer of the uterus. The coincidence of affections of the genital organs and of the mamma, seems, however, somewhat rare; and I have scarcely met with it but in patients who have long been a prey to well-marked cancerous cachexia. I have also been struck with this circumstance, that cancer of the breast is less often reproduced in the genital organs than elsewhere. I have often seen the affection in the lungs, in the liver, in the bones, in the muscles, in all situations in fact, without there being the slightest trace of it in the uterus of patients primarily affected with cancer of the mamma.

On the other hand, it is certain that cancer of the womb, whether *en masse* or infiltrated, or as encephaloid, or as epithelial cancer, is infinitely less susceptible than cancer of the breast of reproduction in other organs. It erodes, destroys, and step by step disorganizes the uterus, the vagina, the bladder, the rectum, and all the parts contained in the pelvis, but it rarely gives rise

to similar productions in the rest of the abdomen or in distant parts. At most it sometimes gives rise to a cancerous transformation of the lymphatic glands of the anus or pelvis, or lumbar region. In general it progresses more like cancer of the face, or epithelial cancer of the lips, than like cancer of the breast.

The presence of a cancer in the mamma, then, does not authorise our inferring the existence of a similar disease in the uterus; and if there be no other indications of a similar serious lesion in this situation, there is no necessity for us to make it a subject of consideration.

E.—The presence of a second cancer, which cannot be operated upon, is always sufficient to contra-indicate the operation in the mamma. If we entertain the suspicion that such a disease exists in the abdomen, stomach, or liver, or in any other part of the belly, it is evident that the cancer of the mamma can only be a secondary disease, and that it would be useless to attack it by surgical measures.

When occurring in both mammæ at once, it has always seemed to me the sign of a generalisation of the disease. I have not, however, met with it more than ten times in 200 examples of scirrhus, and still more rarely in encephaloid. Stony scirrhus *en masse* or in plates, and diffused lardaceous scirrhus or encephaloid, varieties of cancer which, in my opinion, without exception, forbid any surgical operation, here occur singly. The case so often quoted, in which Ledran amputated both mammæ on the same day, does not shake my conviction; for if the patient operated upon by this surgeon was really labouring under cancer, there is no proof that she was radically cured. A multiple cancer authorises an operation only when the tumours exist in the same breast; that is to say, when, the consequence one of the other, they have resulted from transmission by contiguity.

E. *Hereditary Transmission.*—Cancer occurring in a woman whose mother has died of the disease, must give rise to more apprehension of its return, than it would do in a patient in a different position. It would be wrong, however, to consider an hereditary taint in itself as a formal contra-indication to the operation. In the first place, all the children of a cancerous mother are not destined to die of that disease; and, secondly, the radical cure of a cancer is possible in women who are the issue of

cancerous parents. I could quote several instances in support of this. The following is one of the most conclusive:

Two beautiful women, sisters, Madame de V—, and Madame L. H—, who lost their mother from cancerous disease, were attacked, the one at the age of 34, the other at the age of 35, with cancer of the left breast. In both the tumour occupied the external side of the mamma, and in neither was there any enlargement of the axillary glands. I operated on them at an interval of a year, the one in 1848, the other in 1849. In Madame de V— the tumour was a partial, somewhat lardaceous scirrhus; and in Madame L— it was an encephaloid, equally lardaceous at the base, but softened and almost liquefied at the top. In the latter patient the tumour exceeded the size of the fist; in the former, it was as large as a hen's egg. The sequelæ of the operations were in both cases simple and regular. The general health was completely reestablished, but at the end of nine months the disease reappeared in Madame de V—. A new operation became necessary six months later, the wound from which had hardly cicatrized, when here and there scirrhous pustules appeared on the cicatrix. Madame L—, on the contrary, has remained well, and to the present day enjoys perfect health.

The conclusion of Monro, who rejects the operation in all instances in which the cancer cannot clearly be traced to an external cause, is ill founded. I have already shown that a local cause may have given rise to the tumour without the patient knowing it, and without its being possible for the surgeon to be aware of anything of the kind; so that if, on the one hand, it be impossible to affirm that a particular cancer has resulted from external violence, or from some primary local cause, we are, on the other hand, seldom in a position absolutely to maintain the contrary. We are, consequently, unable to make use of such an argument either to admit or to reject the operation. I have seen the disease reproduced in women who attributed their cancer to a blow, just as well as in those who were unable to point out its cause; and I have seen some of the latter remain radically cured after the operation, just as well as the former.

Theory alone can have suggested that ulcerated or painful cancer should not be extirpated. Some of those upon whom I operated, and who have remained cured, were the subjects either of very painful scirrhus, or of extensively ulcerated encephaloid.

The absence of pain is a condition so little reassuring, that encephaloid cancer, which returns with so much obstinacy, is precisely the least painful of all cancers.

With those who refer cancer to an external origin, and consider it a primarily local disease, there is no difficulty, and no difference of opinion as to the course to be pursued. According to them, an operation should be performed as early as possible. Those, on the contrary, who consider cancer a disease which is in the first instance constitutional, and who regard it only as the manifestation of a special condition of the whole system, are divided into two classes, the one reject the operation at any price and at any period. In their opinion it is dangerous, because it is incapable of curing the disease. Others, without denying its utility, resort to it only at an advanced period of the disease.

M. Baffos, whom I have heard maintain this doctrine, believes that the later we operate, the more chance we have of success; his reason is, that the tumour serves in some sense as an emunctory to the organism, and that, at a given moment, all the cancerous molecules may be deposited or accumulated in the external tumour. The operation would thus remove the mass of heterologous matters, of which the tumour had cleared the body by concentrating them in a single point. I do not, however, think it can be necessary to discuss and refute the grounds of this strange opinion, which is also adopted and defended by M. Hervez de Chégoin.[1] If the cancerous disease be at first a general affection, there is nothing to hope for from time; the longer one waits, the wider it spreads, and the more risk there is of the cancers multiplying.

As it is not from the sensations, nor from the age nor antecedents of the patients, nor from the size, the indolence, or the ulceration of the tumour, but, in truth, from the nature and specific form of the disease that we have to decide, it is obvious that the earlier we operate, the greater chance we have of obtaining a radical cure; and M. Moreau, in discussing this question,[2] can only have ventured to say that "We ought not to operate on tumours of the breast in the first stage, for there is always time to do so," in consequence of not having reflected upon the subject.

[1] 'Bulletin de l'Acad. de Méd.,' vol. ix, pp. 535—546.

[2] 'Bulletin de l'Académie,' vol. ix, p. 367.

Boyer[1] maintained that it was possible to distinguish tumours, which merely resembled cancer, from the genuine disease. Under these circumstances, says he, we should renounce the operation in the case of the latter, and may advantageously proceed to it in the case of the former. However, that author's opinion on the point was not very determinate, for, on the very page in which he proscribes the operation, and in different other passages of his article, he seems to affirm the contrary. I think, moreover, that I have now placed practitioners in a position to draw those distinctions for themselves which were demanded by Boyer.

Should the tumour be really cancerous, and in a condition but slightly favorable to the operation, the surgeon ought in all instances to display much prudence and circumspection as to the advice that he may give. Instead of counselling the operation, and urging patients to it, it will be better for him to limit himself to stating, that, "without an operation be performed the tumour cannot be cured, whilst with an operation there may be some chance of success," at the same time that he informs the parents or friends of the patient, that even with operation the return of the disease is much to be dreaded. Having thus cleared the ground, if the family still urge the matter, the surgeon may operate without fear of after reproach. He has acted according to his convictions, and has kept himself within the limits of duty and science.

On the other hand, it may happen that cancer may be present in a patient who insists on the performance of the operation at all risks, when there is no chance of a radical cure. Surgeons, indeed, are not unfrequently placed in this position, for patients who have refused to submit to it in the first instance, almost always end by pertinaciously demanding the operation.

The number of cases in which I have declined to employ the knife, under these circumstances, is considerable. I have certainly met with more than thirty each year, either at the hospital or in consultation. If the case be one of those cancers which I have formerly stated to be beyond the circle of operation, or in which there is one of those contra-indications previously enumerated, nothing in the world should induce the conscientious and prudent practitioner to yield to the solicitations of the

[1] Vol. vii, p. 337.

patient. Out of 183 women who entered the hospital for scirrhous cancer, in more than 50 I have refused the operation. But where the case admits of the slightest doubt, where the operation does not in itself seem to expose the patient to much danger, a skilful practitioner may, with these reservations, accede to the wishes of the patient or of her friends.

One word more. In cases of cancer, there are operations which in some sense may be considered palliative, as there are palliative topical and internal remedies. Thus there are many ulcerated scirrhous tumours, to which it may be advisable to apply caustic, with the sole object of causing mortification in any very painful part. A protuberant encephaloid, covered with large fungous growths, may require the detachment of some of its mushroom-like masses, in order to give momentary relief. A scirrhous tubercle, a limited cerebral vegetation, which can readily be seized and extirpated, may also be sometimes removed, even when there are other tumours of the same kind which cannot be touched, because these trifling operations encourage the patient, and renew her failing hopes without aggravating her position. Nevertheless, it is requisite to be extremely cautious, and to guard our proceedings so as not to terrify ; sometimes employing the knife, sometimes caustic, sometimes the cautery, sometimes ligature. This course, which I have pursued for more than twenty years, is also that of M. Laugier. The invariable practice of M. Maissonneuve,[1] who proposes the operation in all instances, even when it is impossible to remove the whole extent of the disease, or to cure the patient, seems to me justifiable only in instances of this kind.

§ 2. DANGERS OF THE OPERATION.—To sum up, those who reject the operation on principle, adduce two chief reasons for so doing.

1st. That it is of no use. The preceding details, however, have shown that this reason is unfounded.

2d. It is dangerous. On this subject people have fallen into great exaggeration.

The extirpation of tumours of the breast is not very dangerous in itself; some surgeons, physicians, and laymen especially, confound the dangers of the disease with those arising from the operation. Attend for a moment to what is said in the world, in

[1] 'Leçons Cliniques,' p. 57.

the patient's family: here or there, in twenty different places, such or such a woman affected with cancer, has been operated on, and died in consequence. Enquire, penetrate a little more deeply into the matter, and it will be found that these patients died in reality, not from the operation, but most of them, at the expiration of some months, or of a year or more, in consequence of the reproduction of the disease.

The operation is serious, and threatens the patient's life, only in those cases in which the cancer is in a very advanced stage, in which it is necessary to penetrate into the hollow of the axilla; in a word, in complicated cases such as are serious in themselves. When the tumours are limited, moveable, unconnected with each other, and apparently local, the operation is neither dangerous nor difficult; in other words, the danger does not arise from the operation, but from the possibility of relapse. The proof is, that the wound usually cicatrizes and heals rapidly, that patients generally get well at first, and that if they die subsequently, it is in such instances from the formation of new tumours, and from the generalisation of the cancer. With all these unfavorable conditions, in the midst of erysipelas and in the miasma of an hospital, I have had 32 deaths in 167 operations; that is about 1 in 6.

In simple cases, and with tumours of innocent nature, the operation is so little serious (as has been said p 321), as hardly to give rise to fever, and does not require that those who have undergone it should be deprived of food. At the end of a few days they may get out of bed; and, in less than a month, they will probably have regained their strength. The following is a fact which settles the question: out of nearly sixty adenoid tumours operated on by myself there was only one case of death! And, moreover, in what way did it occur in this instance? A young woman operated upon eight days before, who believed herself cured, and who for four days had been walking in the garden, was seized, after a chill, with tetanus, of which she died on the fifth day.

Even in cases of cancer, I have met with pleurisy, gangrene, or purulent infection, only consequent on a complicated operation, and, in short, in cases which were in themselves serious.

I saw, however, two women die at the end of a few days in a singular way, without the examination of the body throwing any light on the cause of death, in two cases of extirpation of

cancerous tumours, of isolated lardaceous scirrhus of smallish size, the operation upon which was in other respects simple. These are exceptional and altogether unusual cases, which, like erysipelas, may follow the application of a blister or cupping glass, or a burn, as well as a great surgical operation.

It is not, then, the danger or gravity of the operation which should prevent our resorting to it when we have the chance of destroying a cancer of the breast; and as the operation is the less serious in proportion as the tumour is more simple and smaller in size, we ought to decide upon having recourse to it as early as possible.

It is said, however, that when it is unsuccessful in effecting a cure, the operation increases the activity, and hastens the progress of the disease, the violence of which it augments. This proposition, like the preceding, arises from a confusion which it is our duty to get rid of. True, when the operation is practised, in one of those forms of scirrhus which, as I have pointed out, always recurs after operation, the statement is false in almost all other cases. I have seen the disease increase rather than retrograde, when I have removed ligneous scirrhus *en masse*, lardaceous scirrhus, or encephaloid cancer, tubercular or pustular scirrhus, or disseminated tegumentary scirrhus; and it is precisely on this account that I have for a long time past declined to operate upon such cancers. The cancers, the progress of which is usually hastened by operation, are cases of encephaloid, which commence all at once, and are developed with rapidity, cases of acute encephaloid and galloping cancer; and, in short, those which are lost in the tissues without precise limits. In all others, the operation retards rather than hastens the outburst of the cancerous virus.

Again, even though the disease may reappear, patients who have been operated upon for cancers of the breast, often remain well for months if not for years. It would be easy for me here to relate the history of a large number of women, who, after the operation, have regained their colour, their flesh, and a remarkable degree of health, from the moment that the cancer was extirpated.

Madame S—, whom I operated on in January, 1851, had an extensively ulcerated scirrhous tumour, inlaid as it were near the sternum, on the front of the sterno-costal cartilages of the left side. The pain and anxiety, with which she was worn out, had

caused emaciation; her digestion was impaired, and she had already a slightly cachectic complexion.

After three different operations the wound became covered with gray fungous granulations, which filled me with apprehension, and which, for the moment, I mistook for new cancerous vegetations. Nevertheless, the wound completely cicatrized. Her fears once removed, Madame S— perfectly recovered her digestion, regained her habitual gaiety, and, subsequently, her flesh, her colour, and all the appearance of perfect health. The summer has since elapsed, and, in spite of trouble and anxiety of all kinds, too well justified by the death of her husband, she had lost nothing of her healthy appearance up to the month of January, 1852, when a new tumour appeared beneath the right clavicle.

Instead of one year, other patients have in this way remained well for two, three, or even four years.

As an instance of tardy return, I may, amongst others, quote the case of a patient at Dunkirk, who, after the amputation of a well-marked sarcocele, remained well for fourteen years. He died in 1851, and the post-mortem examination showed that death had followed the development of a cancerous tumour in the pelvis.

At the hospital of La Charité, I saw a patient die of ulcerated cancer of the axilla, who had remained in good health for twelve years from the time that she had been operated on for an equally ulcerated scirrhus of the mamma.

Consequently, it is incorrect in a general way to affirm that operation hastens instead of retards the fatal termination, should the cure not remain permanent.

In these temporary cures, moreover, we find another proof in favour of the doctrine that cancer is primarily a local affection.

In the present day, when the pain of operations may be avoided, there is really no ground why we should refuse to remove cancerous growths, provided they are in the conditions that have been pointed out. Before the discovery of etherization, the pain was, indeed, a source of much anxiety. It might seem cruel to expose patients to these tortures, for the sole purpose of prolonging their miserable existence for a few months. However, we must not deceive ourselves; the condition of things has, in this respect, entirely changed. Without operation, not only is the disease incurable, but, moreover, as it advances, it

terminates by torturing the unfortunate sufferers. It is not enough to be resigned to remain uncured; the cancerous tumour, whether scirrhus or encephaloid, undergoes ulceration; suppuration becomes established; it gives rise to hemorrhage, to acute pain, and leads the patient to the tomb only in the midst of extreme suffering; and after the production of other tumours, or ulcerations, of swelling and pain in the arm, of loss of appetite and sleep, of vomiting, emaciation, diarrhœa and dropsy; that is to say, before death ensues, the disease slowly or by rapid strides, produces of itself all that can be laid to the charge of operation.

If this painful prospect was, in former times, in some measure counterbalanced by the horror which a bloody operation naturally inspires, the same reasoning evidently no longer holds good.

§ 3. PREPARATORY TREATMENT.—Should we employ other treatment before proceeding to operate? According to prescriptive authority, and to the opinions which still govern us upon this subject, an operation should not be performed but from necessity, after having vainly tried all the resources of therapeutics.

Most patients would consider it strange in us to propose an operation, before having tried many remedies; and physicians, and even many surgeons, arguing upon this subject like the laity, readily censure those who counsel operation at an early period. It is their axiom, *that there is more humanity in curing ten tumours without operation, than in skilfully excising fifty.* A baneful axiom, as false as it is ridiculous, useful only to those, who, from lack of knowledge, confound cancers with innocent tumours. Such persons can, in fact, form no opinion, for they are unable to decide as to the existence of a cancer, until they have vainly brought all the resources of their therapeutical arsenal to bear upon any swelling which may be submitted to their opinion.

The question at issue is entirely different. If the tumour be positively cancerous, and the surgeon is in a condition clearly to establish the diagnosis, what end is there to be attained by struggling against it? It is certain that no known method of treatment can succeed any more when the tumour is small and recent, than when it is in the last stages of its development. I lay much stress upon this fact, for practitioners should know, once for all, that genuine cancer is rebellious, and wholly rebellious, to topical as well as to all internal remedies hitherto recommended. When a cancer exists, there is but one thing to be done, and

that is, to remove it as early as possible. To temporise, is not only to lose time in useless efforts, but also to run the risk of disordering the general health of the patient. If the remedies employed are powerful, they may derange the whole economy, and especially the digestive organs. Erysipelas and excoriation arise under the application of topical remedies; and what is still more unfortunate, the disease from being local becomes general.

Primarily a local disease, cancer can never be left in the tissues without danger and extreme imprudence. Can we fail to be terrified at the idea that the ultimate elements of the tumour may from one moment to another pass into the circulatory system, and contaminate the whole organism. How can we help fearing that the tumour, though still single, may soon become the germ of other tumours around it, to an extent impossible to predicate? Who can fail to be terrified at the idea of thus seeing a disease become generalised, that at first can readily be removed, and which, when once it has escaped from its primitive position, spares no one, and is no longer amenable either to medicine or to surgery? Even supposing that an operation is sometimes resorted to in the case of non-cancerous tumours, what inconvenience can result therefrom? If, for instance, we happen to remove an adenoid instead of a cancerous tumour, the worst is, that an operation has been performed, which, perhaps, was not indispensable, but which, even in such a case, affords at least the best remedy.

The more I reflect upon it, the less can I understand how the dangers of the operation can be put in competition with those resulting from temporizing. On the one hand, we have, in the case of an innocent tumour, a simple incision, of which the patient is well without the danger of return, at the end of a fortnight or month; an incision, which, together with the tumour, gets rid both of the anxiety of the patient and of those around her, and which, as it enables us to promise a radical cure, and to reassure every one, sets aside all fear of cancer for the future.

Now what prospect have we on the other side, even when the tumour is of innocent nature? A tumour which once in fifty times may disappear spontaneously, or from the employment of a thousand measures, more or less fatiguing, more or less capable of deranging the health; a tumour which in all cases must be the subject of perpetual anxiety; which, after remaining stationary

for six months or a year, may then increase either insensibly or by fits and starts, either slowly or rapidly; which most frequently, even after we have thus treated it for months or years, requires us eventually to resort to operation; and lastly, which in some cases seems to change its character, and, singularly, to assume the nature of cancer.

Where, in short, is the practitioner who, after having passed his life in the midst of patients, in the midst of the fears of their families, will not bitterly reproach himself for having recommended useless medications, or tentative treatment in the case of tumours, easily curable by operation, when they terminate by assuming, under his very eyes, the physiognomy of cancer, and such characters of malignancy, that surgery itself has no longer the slightest chance of freeing the economy from them.

In short, in whatever way, or on whatever side we regard operation, it is, first of all, preferable to all other treatment, in cancers and even in adenoid or innocent tumours of the breast; and secondly, it should be resorted to in these tumours as early as possible.

There are, however, certain tumours which may be treated otherwise than by operation. They are purely hypertrophic tumours, different swellings, thickenings, or indurations due to old inflammations, which have been spoken of in former chapters. Slightly painful indurations, comprising a few of the lobes of the mamma, and which may, strictly speaking, be considered as the commencement of scirrhus, but without, as yet, having its characters and genuine physiognomy, will also admit of external and internal resolutive treatment for several months. In such cases, I have achieved very fortunate results. Three principal reasons justify this course of proceeding. First, we have a good chance of curing the patients. Second, we are certain of the innocent nature of the disease, or at any rate, we may doubt its malignancy. Third, in all cases, the tumour being diffuse, or without precise limits, serious operation is necessary in order to be sure that we have removed the whole of the disease.

If the case be not one of cancer at all, the swelling diminishes, changes its aspect, and shortly assumes the characters of a purely inflammatory or hypertrophic product; in the contrary case, its intimate characters are not long in becoming so evident, that there is no longer room for hesitation.

I hasten to add, that in thus temporising my object is to do

all that is possible to cure tumours of doubtful nature, yet more than to elucidate the nature of the disease by treatment. Even should the treatment be unsuccessful, it does not by any means follow that the tumour is really malignant, since adenoid, and many simple hypertrophic tumours, although innocent, obstinately, and almost invariably resist resolvent remedies, both internal and external.

So soon, then, as the tumour declares itself, and I recognise the characters of genuine cancer, I cease to attempt its resolution, and recommend an operation for its extirpation; in other words, I do not believe that we are justified in submitting tumours of the breast to curative treatment, from the moment that we can with certainty diagnose their cancerous nature.

My object, however, is not by any means absolutely to reject resolvent treatment before proceeding to operation. I simply wish to caution young surgeons against temporisation that may be dangerous. If the diagnosis have been accurately made, and the case be one of an adenoid tumour, these attempts at resolution will scarcely have any other inconvenience than their uselessness; but, if it be a genuine cancer, it is certain that we run the risk of thereby letting the favorable moment slip by, and of attacking it only when it is a constitutional disease. The only circumstances which seem to authorise resolvent treatment appertain to certain doubtful forms of the disease which would render the operation difficult, at the same time that they occasionally yield to the treatment under discussion, and which without it would continue to increase and become aggravated.

To the therapeutical resources pointed out above, we may add blisters, applied to the swollen, hypertrophied, or indurated part, as one of the most useful and powerful resolutive remedies that I am acquainted with.

The diseased parts are to be blistered every fortnight, three weeks, or month. In the intervals, we must have recourse to ointments and to plasters, which do not prevent the application of leeches or of other resolutives and of internal remedies.

It is needless to repeat, that when the cancerous nature of the disease is declared, I no longer recommend the employment of this, or of any other remedy; it is, moreover, quite impossible for it to cure adenoid tumours, it is simply to hypertrophic swellings, or to those of doubtful nature, that I apply it.

We have seen that operation constitutes the only curative mea-

sure that we can oppose to genuine cancer with any chance of success. Moreover, the cancers must be selected, for there are nearly a half that must at once be put aside as incurable in any way.

By the word operation, we mean the destruction, by different surgical measures, of tumours, which may, strictly speaking, either be broken up, strangulated, burnt, or extirpated. Although breaking them up has been recommended, and it is said employed with success, it has never seemed to me to be a method worthy of discussion or serious refutation.

It is the same thing with the ligature; at most can this measure be preferred for small pedicled tumours. To pass a ligature around the tumour beneath the integument is evidently more difficult, and more uncertain than the cutting operation or free cauterization. Extirpation then is the only means which deserves an attentive examination; but a distinct chapter must be assigned to the employment of caustics.

§ 4. OPERATIVE PROCEEDINGS.—Operation properly bears the name of extirpation, when a portion of the mamma is removed with the tumour, or the latter is alone taken away. If it is required to remove the whole breast, the word *amputation* is applicable. All things being equal, amputation is more serious than extirpation, and should not be preferred except when it is impossible to do without it.

Without being so serious, or exposed to all the dangers which the laity and some surgeons attribute to it, I may repeat that the removal of cancers of the breast should not the less be classed, in most cases, amidst the serious operations of surgery.

It may be performed at all times of the year; only as it is but rarely urgent, we are not usually compelled to have recourse to it in times of epidemics, when wounds readily become erysipelatous or gangrenous, or when the temperature is either very hot or very cold.

The operative proceedings, moreover, vary according to a number of circumstances, and also according to the taste or doctrines of the surgeon. Thus, the position of the patient, the form and direction of the incisions, the quantity of tissue to be removed, the modes of arresting hemorrhage, and of dressing the wounds, are far from being the same with all operators or in all cases.

A. *Position of the Patient.*—No doubt we may, as I have often seen Richerand, place the patient on a chair or stool; but as this position is liable to produce syncope, and is very inconvenient, especially if the operation be tedious and difficult, it possesses no kind of advantage. The patient had better be placed upon a bed, or on the operating table, properly prepared. When once there, no one would think of placing a cushion in the axilla, for the purpose of pushing the gland towards the front, as was recommended by Bidloo,[1] or of keeping the arms separate by means of a piece of wood placed behind the patient, as, according to S. Cooper, was formerly done.[2]

All that is wanted is to have the head sufficiently elevated, and the patient in such a position, that the side of the tumour may be turned towards the operator, and the corresponding arm carried slightly upwards and backwards; and that a large towel be passed across the chest, and fastened behind, so as to protect the bed and the patient's clothes.

B. *Assistants.*—An assistant must attend to the movements of the head and shoulders, another has charge of the arms, and a third fixes the pelvis, and the arm of the sound side. It is well, also to have a person to hand the instruments, and some one to keep the parts tense during the incisions of the surgeon, and to staunch the blood with a sponge. When all is ready, the first assistant should apply a concave sponge saturated with chloroform to the nose, if the patient is to be rendered insensible. A handkerchief, a strip of lint, or some other such material, may be employed instead of the sponge, or instead of the numerous apparatus that have been devised for the purpose.

C. *Incisions.*—The incisions cannot in all cases be made in the same direction. If, for instance, the skin be so much involved as to require removal, we must give them sometimes one form, sometimes another. It is only when the tumour is free and moveable amidst the integuments, that we can make choice between the different methods that have been recommended. No one now-a-days would advise that cross-threads should be passed through the tumour, for the purpose of elevating and excising it at one stroke; nor add to these threads a tight ligature, in order

[1] Sprengel, 'Histoire de la Médecine,' vol. viii.

[2] 'Dictionary of Surgery,' French translation, 2d part, p. 130.

to strangulate the tissues; nor exercise traction upon it either with the double hook of Helvetius, or with the pincers of Hartemann.

The same remarks apply to the circular incision of Dionis, to the crucial incision recommended by others, and to the T-shaped incisions employed by Chopart.

Strictly speaking, we should confine ourselves to a simple incision either straight or curved, or to an elliptical incision: to the simple incision, if it be possible and desirable to preserve the whole of the integuments; to the elliptical incision, in all cases in which it may be necessary to remove a greater or less extent of skin along with the tumour.

On this subject, we should not lose sight of the nature of the disease, for in almost all cases it becomes necessary to remove a portion of the integuments along with the cancer, whether the case be one of scirrhous, encephaloid, fibro-plastic, or colloid tumour; for the skin is almost always adherent to these tumours at one or more points, and it would be dangerous not to remove all the diseased parts.

In the case of adenoid tumours, on the contrary, even when they are of large size, it is rare that we are unable to detach from them a greater or less extent of the integuments protected with adipose tissue; and as there is nothing malignant about these tumours, there can be no inconvenience in preserving all the surrounding parts.

If the tumour be small, a straight incision will suffice, although for many years past, I have been in the habit of exposing the tumour, whatever be its size, by means of a curved or semilunar incision. This incision, which I have substituted in almost every instance for the crucial, or T-, or V-, or L-shaped incision, or for a starred incision, is extremely convenient. By taking care to direct the convexity of the incision towards the most dependent part, we are enabled without difficulty to expose the largest, as well as the smallest tumours; there is thus left, a wound which readily gives exit to the secretions, the flap of which falls in some measure of itself over the solution of continuity, and the edges of which are easily kept in contact, so that the cicatrix almost always becomes reduced to a central line.

D. *Choice of Instruments.*—We need not, in order to make the incisions, resort either to an amputating knife, nor to the knife

with the large extremity, formerly recommended by A. Dubois. A convex knife to divide the integuments, and a straight bistoury for the rest of the operation, fulfil all the indications of these different special instruments. However, it would be unwise to attribute much greater value to one instrument than to another. A knife that cuts well, whatever be its form, forms in practised hands all that is required for the operation.

I have frequently made use of a convex knife from the commencement to the termination of the operation, without experiencing any difficulty. As a general rule, I employ a straight knife from the commencement, that is to say, from the first incision, throughout the whole operation. In short, these are more matters of taste than of necessity.

E. *Direction of the Incisions.*—The direction of the incision is another point on which opinion has been divided. Benjamin Bell proposed to make it from above downwards, whilst others make it transverse; according to Sprengel, Pempernelle made it along the course of the fibres of the pectoralis major.

There is, in short, no absolute rule upon the subject; the situation, the size, and the form of the tumour, will determine whether the incision is to be made in one direction or in another. Should the tumour be longer than it is broad, the incision should be made along its greater diameter, otherwise it is better to direct it along the course of the fibres of the pectoralis major.

The curved incision also should invariably be made in this direction, when the tumour is situated either above or below the nipple. If it be on the inner side, the convexity of the incision should look towards the sternum, and slightly towards the umbilicus. Above the nipple, the straight incision should be parallel to the axis of the body. The convexity of the curved incision should be turned towards the inner side, or to the outer side, and below, following the size or direction of the principal diameter of the tumour.

We must also be careful that one extremity of the incision corresponds with the most dependent part, so that the fluids may not stagnate at the bottom of the wound, in that position in which patients naturally place themselves after the operation. The oblique incision, moreover, has this great advantage in all cases of cancerous tumours, that it enables us to proceed as far as may

be necessary under the anterior border, and into the cavity of the axilla itself, without much derangement of the primitive economy of the operation. A direction parallel to the axis of the body is more favorable than any other position to bringing together the edges of the wound by means of plasters; but as, in the present day, we usually employ fine sutures, it is an advantage of minor importance.

The method formerly employed by Ledran, who divided the integuments by a semilunar incision, so as to carry the instrument from below upwards between the chest and the tumour, in order to reintroduce it from above downwards, between the tumour and the integuments, deserves the obscurity into which it has now fallen. No one, now-a-days, also, would take the trouble, as was formerly done, to mark the course of the incisions with ink before commencing; it is well, however, to commence by the lowest incision, so as to avoid the inconvenience arising from the blood in the second.

Under all circumstances, the assistant ought to draw the tissues in the direction opposite to that of the surgeon, so that the skin may neither be puckered nor misplaced by the pressure of the knife. As soon as the integuments are divided on one side, the assistant or the operator is to draw the tumour in this direction, in order to proceed to the second incision, according to the same rules.

The tumour is then to be seized, either with the fingers or with a hook, and drawn in the direction opposite to that in which the surgeon makes his incision, and the operator is to use his knife, first below and then above, whilst the assistant carefully and repeatedly cleanses the wound.

When the deep surface of the tumour has been reached, it is to be dissected away by free strokes, either from below upwards, or from above downwards, or from one angle to the other, as may seem most convenient and most safe. In order not to leave any portion of diseased tissue behind, the surgeon must carefully examine with the finger the parts which he divides, never forgetting, that should the tumour be cancerous, he must remove a certain extent of sound along with the diseased tissues.

However, when I am operating upon a genuine cancer, I make the incisions with less precaution. Plunging in a straight bistoury, I with one stroke divide all the tissues to the lower surface of the tumour. Two of these parallel incisions enable

me to include the tumour in an ellipse, and to separate it like a slice of melon. In this way the wound is more uniform, and the operation more rapid, but the proceeding is inapplicable except in those cases in which it is desirable to remove a considerable extent of sound tissue along with the tumour. In the case of an adenoid growth, I often also operate by puncture, so as to reach the tumour at once. When it has been laid bare in some one point, I seize it by means of a hook, and divide the structures around so as purely and simply to enucleate it, without at any rate attempting to remove with it much of the healthy tissues.

These different methods of operating are naturally dependent upon the diagnosis. If we believe the disease to be adenoid, the sound tissue should be preserved, and the tumour alone removed; but with a malignant tumour we should never be content with merely taking away what is *visibly* altered: it is necessary that the tumour, when removed from the body, should be surrounded with non-cancerous structure, if we would give the operation any chance of succeeding.

F. Some surgeons, desirous rather of proceeding rapidly than well, have proposed to apply an operation by *transfixion* to tumours of the breast, a method which has also been recommended for other kinds of tumours in all other parts of the body, and which has long been employed in amputation of the limbs, and particularly for the flap operation.

This mode of proceeding, of which there are two varieties, and which I have employed upon several occasions, necessitates the use either of a small knife, or of a long bistoury, according as the tumour be small or large. Having raised the tumour from the thorax with the left hand, the surgeon transfixes the tissues with his knife, between the tumour and the chest, as if for the purpose of passing a seaton. This done, 1st, The bistoury, directed downwards, is made to divide the inferior portion of the tumour, and then, being reintroduced into the wound, is directed upwards in the same manner. The operation, therefore, is composed of three stages, the puncture, the inferior, and afterwards the superior incision. 2d. Some persons, instead of cutting the tumour in this way, divide it into two equal perpendicular halves from behind forward, and then successively and separately remove the two lobes.

As a general rule, I am not an advocate for wounds made from within outwards; that is to say, for operations by transfixion: for in this way, we are always working somewhat in the dark, the borders of the wound are never very regular, and we may divide either more or less than is necessary. For example, the first proceeding occasions a considerable loss of substance; and by the second, the successive dissection of the two halves of the tumour is neither easier nor more prompt than the ordinary operation.

In short, as it is always easier to give to the incisions the form, direction, and extent that is desirable, when the knife is directed from without inwards, incisions by transfixion should never be preferred; and the vain desire to exhibit an ill-advised dexterity in the eyes of bystanders, should here, as in all other instances, give way to the security of the operation, and to the real interests of the patient.

G. *Examination of the Wound.*—When the tumour has been removed, it should immediately be attentively examined throughout its whole extent, both with the eye and with the finger. Should the smallest portion of degenerated tissue have escaped, it should be seized either with the fingers, forceps, or hook, and excised at one stroke of the knife or scissors. Upon this point we need not fear going too far. If the disease require it, the pectoralis major muscle should not arrest us. The smallest shade of the disease must be taken away, if we are determined not to lose any chance of success. However, should there appear to be the necessity of interfering with the bones, or resecting the ribs, we must not deceive ourselves. The return of the disease is then inevitable, and it would have been better not to have undertaken the operation at all.

Having already, when speaking of the contra-indications to the operation, stated what is to be thought of these unfortunate cases, it would be useless to return to the subject at the present moment.

H. *Accessory Tumours.*—In ordinary cases, the operation is thus terminated; but it may happen, that there may be secondary or accessory tumours, either under the border of the pectoral muscles, or in the cavity of the axilla. In the case of innocent tumours, enlarged glands, which, however, are very rare, may be left, if they are of small size, and still soft. If, indeed, these

axillary tumours arise simply from sympathetic irritation, they may be left undisturbed even in the case of genuine cancer of the breast; for if they continue to increase, and subsequently assume a cancerous character, they may be attacked by a distinct operation, whilst we have thus avoided the risk of uselessly increasing the gravity of the primary operation.

The extirpation of secondary tumours may be effected in two different ways. 1st. Should the tumour be situated in the subpectoral border, or in the axilla, at no great distance from the principal incision, it will suffice to prolong the external angle of the wound in order to remove it. 2d. If there be a considerable extent of sound tissue between the axillary tumour and the wound in the breast, it is, on the contrary, advisable to make a fresh incision.

With this latter proceeding it becomes necessary to proceed more deeply than was intended at first, and the incision should rather be made too long than too short. The enlarged glands being seized with the hook, and drawn downwards by the assistant, should then be removed, either by repeated strokes of the knife, or with the scissors, or with the handle of the scalpel, always taking great care to avoid the vessels towards the shoulder and arm.

As a general rule, I prefer to separate the tumour with the fingers, when it is possible to do so, and to enucleate and detach it rather by tearing than by cutting, on account of hemorrhage.

The enlarged glands are sometimes situated so deeply towards the clavicle and the brachial plexus, that there would be danger of wounding the large vessels if we were to follow the tumours to their ultimate ramifications with the point of the knife. Under such circumstances, it is better to tie a ligature round the pedicle of the mass, and having strangulated it forcibly, to divide it below the ligature.

1. *Remarks.*—It is needless to say that the modes of proceeding now pointed out must be modified according as the form or dimensions of the tumour seem to require; and that the surgeon is always free to adapt the operation to the individual peculiarities of each case.

Thus, the curved incision, which is usually reserved for innocent tumours, should be substituted for the elliptical incision, if, as often occurs, especially in women advanced in life, the cancer is situated in

the submammary fold. By means of a semilunar incision, the sound tissues may be detached from below upwards, and the tumour, when once laid bare, may then be easily removed also from below upwards, by means of a curved incision, carried from the lower part of the disease. In this way we obtain a large flap, which of itself falls over the wound.

If a considerable portion of the mamma is affected, it is better to remove the whole gland than to preserve a few of its lobes. Some surgeons have stated, that, as a general rule, the whole mamma should be sacrificed in a case of cancer. No matter how small the tumour may be, I have often heard M. Roux say that the return of the disease is almost certain, if we remove merely a portion of the parenchymatous organ in which a cancer happens to be situated, in place of amputating the whole. However, notwithstanding my respect for M. Roux, I cannot coincide in his opinion on this subject. Cancers of the testicle recur scarcely less often than those of the tongue or of the mamma; and it is the same thing with cancer of the eye, in which we remove the whole contents of the orbit.

If there be no contra-indication, it is well to preserve the nipple, especially in women who have not ceased to menstruate. The remaining portion of the gland may still perform its functions without difficulty, and the form of the bosom is less affected. Without the nipple, on the contrary, any portions of the mamma that have been preserved are more useless than useful. Having lost their excretory ducts, the secretions may become a source of inconvenience which it is well to avoid. After the cessation of the menses, however, the mammæ having no further functions to perform, tend to become atrophied; consequently, we may preserve any portion that we may desire, whether the nipple remains intact, or has been sacrificed in the operation.

3. *Bleeding.*—In whatever way it may be accomplished, the extirpation of tumours of the breast, is always attended by a loss of blood, but the recommendation to tie the arteries as they are successively divided, is followed but by a very small number of surgeons. The operation is thus prolonged without any real advantage, and merely increases the distress of the patient.

Perhaps it might be necessary to adopt this course, if the dissection were extremely tedious; but this can scarcely arise in the case of tumours of the breast. It is more natural and more

convenient for an assistant to put his finger upon the mouth of any large artery, until, when the tumour has been removed, each bleeding vessel can be seized with the forceps, and tied. The assistant must carefully cleanse the different portions of the wound by means of rapid touches with a dry sponge, whilst the surgeon and another assistant carefully bring its lips together. After tying all the bleeding vessels, it is advisable to let the patient repose a little. During anæsthesia, and the disturbance, whether stomachic, cardiac, or respiratory, so frequently consequent upon it, the blood ceases to flow for a time, but reappears afterwards. It is even well, if we do not desire to obtain immediate reunion, to content one's self with light provisional dressing, and not to proceed to the final dressing until after the lapse of some hours.[1] By this means we are more sure of not allowing any artery to escape, and of guarding against any hemorrhage.

Before the ligature of bleeding vessels, pressure and stiptics were employed to arrest the hemorrhage after amputations of the breast, but no one now-a-days pays any attention to the recommendations of J. L. Petit and Thédeu upon these subjects. At most are we justified in contenting ourselves with compression in those cases, in which the knife has merely divided insignificant arteries ; and in such cases if we do not desire to dress the wound at once, dossils of lint, either dry or saturated with astringents, kept in their place by means of a convenient bandage will frequently be sufficient.

K. *Torsion.*—Torsion, although efficient in some cases, yet does not present advantages or facilities sufficiently great to make us give it the preference over the ligature. It also is a resource which has already had its day, and which will soon be forgotten. Nevertheless, if it appear very important to obtain an absolutely immediate reunion, and there are only a small number of vessels to close, it deserves a trial. By means of it we may arrest the blood and obliterate the vessels, without keeping any foreign body in the wound.

As a general rule, the arteries are to be seized in the order in which they present themselves to the eye of the surgeon. If, however, he should not be directed by the jets of blood, he should

[1 Many operative surgeons are of opinion, that there is a better chance of obtaining union by adhesion when the wound is left open for some hours, than when it is closed immediately.—Ed.]

search for the arteries in the first instance towards the axilla, where they are furnished by the external mammary, and subsequently towards the inner side, where they are derived from the internal mammary; if after having flowed in jets, the bleeding vessels should cease to be apparent, either from their retraction amidst the tissues, or from being bent at an angle, or from their mouths being stopped up by clots, it is desirable to apply a sponge with some degree of force so as to remove the clots which obscure the bleeding surface.

In the skin, as well as in the cellular fatty tissue, the vessels are generally easily seized, but it is not so in muscular or glandular tissues. In those situations it is often desirable to employ a tenaculum. Every divided artery which throws out blood in a jet should be either tied or twisted. If it be at the bottom of the wound, and the blood simply flows of a blackish or venous colour, and a compress be preferred, we need have no fear of hemorrhage. Well-adjusted dossils of lint, and a convenient bandage, obviate any danger of this kind.

Powders, hæmostatic solutions, ergotine, l'eau de Binelli, l'eau de Bocchieri, and l'eau de Pagliari, so much spoken of, and, in truth, so little efficacious, may be tried, as well as the perchloride of iron, the action of which is in truth somewhat less contestable, although, I fear, not of any great practical utility.

§ 5. AFTER TREATMENT.—All that has been said respecting the dressing of wounds in general is applicable to solutions of continuity resulting from the extirpation of mammary tissues. The question of union by the first intention in this locality, and of dressing the wound openly, have been as much debated as elsewhere. It may, in fact, appear strange, that the same reasons have been adduced on both sides, for preferring the one mode of dressing to the other.

A. *Union by the first intention.*—Most of those who recommend immediate reunion of the wound, state that it is one of the best means of preventing the return of the cancer. By closing the wound at once, they say, we obviate all serious local reaction, and the patient has thus every possible chance of being radically cured. Vacher and many others attribute the same advantages to union by the second intention. To close the wound, say they, is to deprive ourselves of the issue given by the operation to the

morbid elements that may happen to remain in the system; and, by proceeding thus, we rather favour than hinder the reproduction of the disease. It is, therefore, better, in their opinion, to remove the skin at the same time as the tumour, and to cause the wound to suppurate. I do not think, however, that such doctrines are worth serious discussion. The reproduction of the cancer depends upon the nature of the disease, and not upon the dressing of the wound. It is, consequently, from entirely different reasons, that the question of immediate union is to be adopted or rejected. The mode of dressing is often pointed out by the wound itself. If much integument have been removed, and the patient be thin, most frequently we have no choice but to dress the wound as an open one, and for this purpose a perforated piece of linen, spread with ointment, is to be placed on the wound, which is subsequently to be covered with thick strips of lint and compresses.

When the tumour is large, and it is necessary to prolong the incisions towards the axilla, and when, instead of a wound with clean edges, there is an irregular cavity, moderate plugging and reunion by the second intention should be preferred. The question can hardly arise except in those cases in which it is easy to place the edges of the wound in contact, without leaving behind either caverns or extensively bruised tissues.

Union by the second intention, and dressing the wound does not, however, occasion more pain and reaction than union by adhesion.

As a general rule, an incision into the breast, dressed as an open wound, soon ceases to be painful, and is rarely attended with serious results. Traumatic fever frequently does not occur at all. The surrounding parts inflame and swell but slightly. Erysipelas, diffuse phlegmon, and inflammation of every kind, are hardly to be dreaded. Suppuration, which is at first abundant, soon diminishes; and when cicatrization has once commenced, it proceeds so rapidly that the wound is closed in from four to eight weeks.

We may avoid any pain at the first dressing, in the majority of cases, or at any rate render it trifling under the most complicated circumstances. If a perforated piece of linen, spread with cerate be applied, there can be no adhesion to the wound, and the first dressing occasions no more pain than the subsequent ones. In the case of deep wounds, the dressing spread with cerate pre-

vents the lint from excoriating the surface. At the expiration of three or four days, when suppuration has become established, the first dressing should be removed, and it will be sufficient to make gentle traction on the borders of the perforated linen, to extract the lint without occasioning either laceration or pain.

Supposing that the wound be irregular, uneven, or deep, or that there is a sufficient flow of blood to necessitate the introduction of a tent, we may even, under such circumstances, prevent our patients from suffering much pain at the first dressing. It is only necessary, in the first instance, to remove those portions of the dressing that have not contracted any adhesion to the tissues, such as the bandage, and the external compresses, which may be replaced as though the whole apparatus had been changed. On the next day, we may remove such of the other pieces of lint as, when saturated with tepid water, or softened with the pus, can be readily detached.

At the third dressing, it is rare that the suppuration will not have separated all the rest, or that it will be necessary to drag or tear any of the parts. In short, there is no necessity forcibly to remove the lint which has been placed in the wound; and as there is no danger in allowing it to loosen by the suppuration, we thus render this mode of dressing as mild and harmless as any other. In this respect, then, union by adhesion does not present so many advantages over union by the second intention as some surgeons suppose.

B.—The *immediate reunion* of the wound appears in a more agreeable light to those who are unacquainted with medicine. It gives an appearance of immediate cure which is very pleasing. It looks as if, by placing the borders of the wound in contact, the patient would be cured in a few days, and the cicatrix leave but very little deformity. But it is too often forgotten that, in order to obtain these advantages, the surgeon is in the first instance playing a game of double and quits. Should immediate reunion and complete cicatrization by the first intention occur, so that the wound closes without suppuration, we have every reason to be delighted; but this circumstance is so rare, that I have only witnessed it on four or five occasions, twice in men, three times in women; in all instances, after the removal of small tumours, and in patients who were somewhat thin, where there had been no necessity for ligatures, and where the wounds were perfectly

even and of small extent. Except under these circumstances, I have usually found the wound to suppurate, so that it almost always required from three to five weeks before cicatrization was complete. Moreover, on close consideration, it will be found that by union with the second intention, the wound closes almost as rapidly as by union with adhesion; at any rate, if it be not too large, a wound dressed openly is almost always well at the end of a month or six weeks.

Should the adaptation of all parts of the section not take place, and it is difficult for it to occur, as it depends upon the density, the thickness, the vascularity, and the very different degrees of vitality of the tissues, for the wound is almost always more or less angular and irregular, union by the first intention is evidently exposed to dangers, from which union by the second intention is free.

Should blood or any of the products of suppuration stagnate in some corner, it is quite sufficient to give rise to erysipelas, or to diffuse phlegmon, or to transform the wound into a sort of abscess. Thence arises pain, heat, fever, and intense constitutional symptoms, which may compromise even life itself. The following is a case of the kind, which I published nearly thirty years ago:

Radiated scirrhus; extirpation; union by the first intention; death by erysipelas.—A country woman, æt. 53, of good constitution, and very fat, came into the Hospital des Cliniques on the 25th June, 1824. Fifteen months before she had bruised her left breast against a table. A small induration shortly became perceptible in the mamma. When examined at the hospital, this tumour, although buried in the midst of a large quantity of fat, was, nevertheless, as large as a hen's egg; it was extirpated on the 30th. The size of the breast permitted the removal at the same time of a considerable amount of the healthy tissues. M. Roux closed the wound, the borders of which came together without difficulty. About the fourth day, an inflammatory line became perceptible beneath the pectoralis major and under the axilla. In a short time, the inflammation extended towards the clavicle and shoulder as far as the neck. The wound opened again, and a quantity of blackish fluid pus made its escape. The patient lost her strength, and death occurred twelve days after the operation. On post-mortem examination there were found to be large abscesses, which had separated the pectoral muscles and the latis-

simus dorsi. Other sinuses extended into the fatty tissue, especially over the thorax, and in the subclavicular region. The tumour itself consisted of ramous scirrhus, with a nucleus of pure scirrhus, but there were no traces of cancerous growths in the viscera.

In contrasting such dangers with the advantage derived from the wound closing some days sooner, I have asked myself the question whether, as a general rule, union by adhesion should be preferred to dressing the wound openly, and procuring reunion by the second intention. Of what consequence, in short, is it, whether a woman be cured a week earlier or a week later of a lesion, which, after the first ten days or a fortnight, neither interferes with her getting up, nor with her going about, and from that time forms a wound of slight importance, if by this mode of dressing, she is thus spared the dangers to which she would be exposed from union by adhesion.

Nevertheless, I am in the habit of attempting immediate reunion in those instances in which the edges of a wound are not cavernous, and can be easily brought into contact. In all cases, however, if I entertain any doubt about the possibility of complete adhesion, I take care to leave a free passage for the pus in the most dependent situation.

This mode of dressing, however, requires great care. It is to be accomplished by means of strips of plaster, by sutures, or by the *serres-fines*.

1. *Plasters.*—If the borders of the wound are thick and even, and we have been enabled to divide the tissues like cutting a slice out of a melon, longish slips of diachylon plaster, four fifths of an inch broad, will answer the purpose. The only objection that can be made to them, is, that they favour the establishment of erysipelas. As also it is necessary to maintain the sides of the wound in contact at the bottom, it is often useful to place graduated compresses either above or beneath the plaster, so as to keep up some degree of compression. The ligatures being fastened to some point of neighbouring skin, there is nothing more to be done than to place a strip of perforated linen, previously spread with ointment, along the line of the wound; then the compresses of lint, and the bandage.

2. *Sutures.*—Whenever we have soft or thin flaps, adhesion will occur more readily with the suture than with the plaster.

The ordinary or the twisted suture, although too much ne-

gleeted since the time of Pibrac, are both really useful in the wounds now under consideration. Unlike plaster, they do not run the risk of causing the borders of the wound to become separated and displaced. They leave the parts in a favorable position for the subsequent dressing, and I have obtained results from their employment which I could not have anticipated from any other. We are at liberty to make use of strips of plaster or graduated compresses over them, so as to keep up regular gentle pressure on the corresponding deep surfaces of the wound.

3. *Serres-fines.*[1]—A method of bringing parts together, which in a short time will no doubt supersede the suture in many instances, has recently been introduced by M. Vidal (de Cassis), and is now known under the name of union by *des serres-fines.* These little instruments embrace the edges of the wound so perfectly, and keep them so exactly in contact, that they produce extremely rapid union. The adhesion of the tissues goes on so rapidly under the pressure they keep up, that they may be removed at the expiration of from twelve to twenty-four hours, or at any rate after a couple of days.

As the skin has not been injured in any point, the wounds brought together in this way often cicatrize without any suppuration. With the *serres-fines* we should, as much as possible, dispense with any other dressing, and leave the part open, or covered merely with wet lint; but, if it be necessary, we may also make use of graduated compresses, and of the apparatus for compression to be spoken of presently.

Should the edges of the wound be thick or lardaceous, and some force be necessary to keep them together, we must not trust too much to the *serres-fines,* but resort to plaster or to ordinary sutures.

c. *Subsequent Dressing.*—In whatever way the wound has been treated, should nothing abnormal occur, the dressing should not be renewed for three or four days. The strips of plaster should be allowed to remain for a long time, if they are not disarranged, and if the state of the wound permit. Some of the points of suture should be removed on the third day, and the others from the third to the sixth day; these should be replaced by strips of

[1 The *serres-fines* are little spring hooks made of wire, which pinch the integument without puncturing it.—Ed.]

plaster, if there is any fear that the edges of the wound will separate, a precaution which is equally necessary after the removal of the *serres-fines*.

If pus, or other fluids should have accumulated behind, it will be necessary to reopen the wound at some one point, in order to give free egress to these morbid products. Poultices are then to be substituted for any other dressing. If there be violent constitutional symptoms, we should not neglect either bleeding from the arm or leeches around the wound, in cases of acute inflammation, or of threatened diffuse phlegmon; inunction of mercurial ointment, or compresses saturated with elder-flower water, should be employed in the event of erysipelas or of glandular inflammation.

D. *Anaplasty.*—When the operation has necessitated the removal of a considerable amount of integument, surgeons who advocate immediate reunion, have proposed to borrow a flap of skin from the neighbouring parts sufficiently large to cover the whole extent of the wound. This, it is evident, is anaplasty or autoplasty applied to losses of substance from the region of the mamma.

Amongst the surgeons who have proposed or carried this method into application, some have had in view merely the procuring union by the first intention, the avoidance of suppuration, and the formation of a less tense and more supple cicatrix, less liable to excoriations or fissures.

Others, aiming at a more extended object, have supposed that they could thus prevent the return of the cancer. Anaplasty by separation of the edges of the wound, anaplasty by the flap operation, anaplasty by a lateral flap, and anaplasty by the Indian method, have all been tried and recommended.

I have never practised any other form of anaplasty than that by the French method, either by simple separation of the edges of the wound, or by a flap brought up from below, or brought down from above; in short, anaplasty by displacement.

In the present day, however, I never resort to any of these proceedings. In order to render them necessary, the integuments covering the tumour must have been taken away along with it, and the operation have left a wound the edges of which cannot be brought together.

Now this can never occur except in the case of extensively

ulcerated tumours, of diffuse lardaceous encephaloid, of stony scirrhus, or of lardaceous scirrhus *en masse*, all forms of cancer which in the present day I never submit to operation. As these different anaplastic operations complicate the proceeding, it is wise not to resort to them; but what is still better, is not to dream of removing a tumour which could suggest any such measure.

It was the opinion of M. Martinet, that a flap removed from a distance and placed over the wound would prevent the reproduction of the cancer.

A certain number of facts were quoted by him in favour of this doctrine, and even in Paris, some surgeons have gone so far as to lend to this proceeding the authority of their names. It has not been without some surprise, although for long past, I have ceased to be surprised at any absurdity of the human mind, still I repeat it is not without some surprise that I have witnessed the reception of such an invention into the practice of surgery.

By virtue of what quality, I may ask, can the transplantation of a flap of skin from the neighbouring parts prevent the return of cancer. If the economy be infected with this cruel malady, where can be the value of anaplasty? If cancer germs have been left in the wound, how can the transplanted flap prevent the formation of a new tumour? If there be any seeds of the primary disease in the neighbourhood, how can we expect that this proceeding will prevent the development or the evolution of secondary tumours?

In fact, a person must be very greedy of self-deception, or endued with a large amount of credulity, to accept what for the last twenty years has been said in favour of the proceeding; a proceeding, however, which I should not have considered it necessary to discuss, if one of our distinguished hospital surgeons had not, at the suggestion of MM. Blandin and Sédillot, endeavoured to prop it up with new facts. M. Chassaignac has adduced in its support the example of a female in whom the return of the disease took place in the neighbourhood of the transplanted flap, which itself remained unaffected by the cancer.

I must apologise to my distinguished colleague, but really this fact affords no proof whatever that anaplasty has any power in preventing the return of the disease after the removal of the cancer. He knows as well as I do, that after a well-executed operation, the cancer returns at a certain distance, or in the axilla,

or at some still more remote part, rather than in the exact locality of the operation, so that in truth, if anaplasty had the power of preventing the reproduction of the disease in its original position, the persons operated upon would scarcely be benefited. What is there astonishing, if new tumours appear around the transplanted flap rather than in its substance.

From what we know of the nature of cancer, are we not in a position to assert that when the germ of scirrhus or encephaloid has been left in the wound, it will neither be stifled nor arrested by such a proceeding. No: it is not thus that the return of cancer can be prevented. It is time that surgeons, once for all, should make up their minds, and remain convinced that reproduction after the removal of cancer depends upon the intimate nature of the tumour, upon the local or general modifications which it has impressed upon the economy, and not upon the mode of operating, or upon the mode of dressing employed to cure the wound. Upon this subject, then, I cannot now express my opinion more simply than I did in the year 1839, or than, still later, I expressed it in reference to the observations of M. Martinet. "*Le vrai peut quelquefois n'être pas vraisemblable.*"

I have no hesitation in stating positively, that "under no form can anaplasty exercise any power in preventing return after the extirpation of cancerous tumours."

§ 6. REGIMEN OF THE PATIENT.—Whatever method of dressing may have been adopted, the patient should be removed to bed, and remain resting in an easy posture, the arm supported by a cushion, and slightly separated from the chest.

If the wound be not too extensive, or if it be very regular, whether we have endeavoured to bring about union by adhesion, or reunion by the second intention, it is unnecessary that the patient should be confined to very low diet. From the first day, I am in the habit of ordering bouillon, and sometimes even broth.

When everything proceeds favorably, I prescribe, from the day after, soup, and from the third or fourth day, bread, with eggs, or fish, or meat. A stricter diet, in fact, is only useful in exceptional cases, when there are vast or complex wounds, or in patients whose digestive organs are seriously affected.

Should the operation have caused much anxiety or nervous excitement, it may, in the case of severe pain, be useful to ad-

minister an antispasmodic or narcotic draught. Drink need not be given except there be thirst, and it may be composed of mild infusions, of lemonade, or gaseous waters, according to the state of the patient, and the condition of the chest and stomach.

To proceed to the first dressing of the wound on the day succeeding the operation, as is recommended by Blandin, can be of no use. The reasoning upon which these modes of dressing are founded, has never seemed to me to be of the slightest value. Their only object is to permit the eye to observe what is taking place around the wound, a species of curiosity which necessitates movements of the body, and a degree of traction on the wound that may interfere with advancing union. What moreover do we expect to see? Local mischief, when it does arise, never occurs at so early a period. Inflammation, erysipelas, or glandular affections supervene only after the third, fourth, or fifth day. If any serious local affection does occur in the first instance, the surgeon is advised of it by the supervention of fever, pain, or unusual constitutional disturbance; in no case can it be necessary to remove the dressings for the purpose of ascertaining that nothing injurious has commenced about the wound, or that it is likely to be transformed into an abscess.

The utmost that can be said in favour of this method is, that it may be adopted without any great danger, and that it is not worth while either condemning, or recommending, or discussing it at any great length. On this subject the following is the only reasonable rule. In the absence of any particular contra-indication, the first dressing should not take place until the third or fourth day, and even then, we ought not to make any great effort to remove pieces of dressing, which the suppuration or saturation with water have not sufficiently detached.

On the slightest alarm, on the other hand, it will be right to remove the dressings, and to reapply them according to rule when this has subsided.

With the *serres-fines*, there is, so to speak, no dressing necessary, unless we think it desirable to place a moist compress over the wound. In this way we may examine it every day, just as in the case of sutures.

After the first dressing, the wound should, as a general rule, be cleansed, and dressed every twenty-four hours at the least. Henceforth it does not differ from an ordinary wound; and as all

the considerations respecting wounds resulting from operations are here applicable, there can be no necessity for my dwelling further on the subject.

§ 7. UNTOWARD RESULTS.—In ordinary cases, a patient operated on for a tumour of the breast, can hardly be considered ill. She may get up every day, and, at the expiration of the first week, remain for some hours in the sitting posture. I have seen patients who had recovered their primitive vigour and customary good looks at the end of a fortnight. The cure, however, which is rarely complete in less than a month, sometimes requires six weeks. In general, the wound closes in the space of from three to six weeks, rarely less, rarely more; but accidental occurrences sometimes present themselves, and give an entirely different complexion to the consequences of the operation.

A. *Death occurring from inexplicable causes.* — I have seen patients die, after the extirpation of tumours of the breast, in the space of three days. One such case happened in a robust peasant woman, who came to me from the neighbourhood of Compiègne, with the request that I would remove a tumour that was in her breast, and allow her to return home immediately after the operation! I took some pains to make her understand that the operation could not be estimated so lightly, and that it would be necessary for her to remain in the hospital. The operation, which was for scirrhus, and quite simple in its character, was performed on the day but one after. On the same day, however, the patient was seized with intense fever, and pain in the belly, and the next morning I found her the subject of violent peritonitis. On the third day, this poor creature, who on leaving her home had entertained the notion that the tumour could be removed from her breast, like the extraction of a tooth, was gathered to the dead. Her death, which had occurred from a well-marked lesion, was due to one of those unfortunate coincidences which always surprise us, though they are far from being rare in practice. In the following two cases, however, this explanation was wanting.

A patient, who was brought to me by her attendant, Dr. Parent, a stout, robust woman, forty years of age, from whom I removed a non-ulcerated encephaloid mass, not so large as the fist, was seized on the same day with nervous excitement, agitation,

fever, heat of skin, and intense thirst. On my visit, the next morning, I found her a prey to the most intense anxiety, to agitation, to a sort of choking, incessant restlessness, great pain in the kidneys, some nausea, and undefined pains throughout the whole body. On the second day, delirium supervened, and the tongue became dry. However, nothing particular occurred in the neighbourhood of the wound, which I had taken care to uncover on the preceding day. Nothing abnormal was discovered about the heart or lungs, on auscultation or percussion, nor anything remarkable in the abdomen. Nevertheless, the patient died on the evening of the third day, and the post-mortem examination failed to throw any satisfactory light on the causes of her rapid decease.

Towards the close of the year 1851, a similar case again occurred at the hospital. Placed on my guard by the preceding one, I was from the first more alarmed on this occasion than I had been before, and stated my apprehensions to the pupils in the lecture theatre. Just as in the other case, this patient remained anxious, agitated, burning, and greatly distressed, from the evening of the operation till the third day, without the supervention of erysipelas, phlegmon, pleurisy, pericarditis, peritonitis, or other abdominal affection. The post-mortem examination was made twenty-four hours after death, but did not display any material lesion.

In this case, as in the first, the cause of death remains a sort of mystery. I may add, that the patients were both in good health previously, that they were not more alarmed than many others, that there was nothing extraordinary in their characters, that the operation was quite simple, and that if a too exact reunion of the wound could be objected in the first case, there were no grounds for it in the second. The patient, in the year 1851, had taken ether, but at the time of the first operation etherization had not been invented.

It is needless to say, that both these patients had been energetically treated. Bleeding, leeches, blisters, sinapisms, seltzer water, acidulated draughts, antispasmodic and opiate draughts, narcotic and emollient dressings, were all employed in vain.

B. *Pleurisy.*—Sometimes in patients who have been operated upon for the removal of tumours of the mamma, effusion takes place into the corresponding pleura. They seem to me to arise in two different ways. In some instances they occur insidiously,

without any inflammatory symptoms sufficiently serious to awake attention, and as if the morbid process had arisen from the continuity of the wound. Nevertheless, in these cases, the patient never remains free from fever. The pulse preserves or regains its frequency without ceasing to be feeble and small. Attentive observation will show, that the patient respires ill and is pale; but as the presence of the wound may, strictly speaking, explain such symptoms, it may happen that the disease will not be recognised from the first.

Pleuritic effusions are, however, usually announced by the ordinary signs of pleurisy. Shivering, and then pain, accompanied with fever and anxiety, arrest the attention in the first instance. Sometimes it is evidently the proximity of the wound itself which gives rise to the internal inflammation. At other times the operation acts only as a predisposing cause, and we recognise as the exciting cause of the pleurisy either a chill or some error in diet. These things should be sufficient to make the surgeon adopt proper precautions at the time of the dressing. I have seen these accidents, however, occur only after the extirpation of cancerous tumours where there had been extensive dissection, or in patients whose constitution was much shaken in the first instance. It has occurred in four out of 167 cases in my hospital practice.

I do not refer to pleurisy, or to effusions due to purulent infection, to the internal production, or to the general infection of cancer.

The practitioner will, however, find himself much embarrassed in these cases. The wound interferes a good deal with auscultation and percussion. The condition of the patient often prevents our resorting to the free abstraction of blood. Leeches and blisters are difficult of application, and the same remark applies to cupping. These effusions, however, are extremely serious, and we must treat them by the ordinary remedies, and especially persevere with internal remedies.

c. *Phlebitis and Purulent Infection* are somewhat rare after amputation of the breast. I have met with but five well-marked examples of it in the course of my long practice, and in 235 cases of cancer of which I have taken notes. On two occasions I have witnessed a sort of articular and muscular rheumatism after the extirpation of a tumour of the breast. In one of the patients the

inflammation terminated by resolution at the end of five days, under the influence of two general bleedings and mercurial inunction. In the other there formed successively three abscesses, two upon the fore-arm, and the third in the front of the leg, but outside the articulation; but there was no other ill consequence.

D. *Cancerous Infection.*—An occurrence which happens pretty frequently, but at a somewhat later period, depends on cancerous infection.

I do not here by any means speak of the infection which occurs insensibly throughout the whole economy, and terminates by constituting what we know under the name of the cancerous cachexia, but rather of an acute accident, which takes place before the cicatrization of the wound, usually in the course of the first three weeks.

I have seen this infection occur on three or four different occasions, from the tenth to the twentieth day. It is ushered in by shivering, by slight febrile disturbance, by loss of strength and appetite. The wound, which has hitherto been discharging or cicatrizing, changes its aspect, and becomes grey-coloured or dull, enlarges instead of diminishes, and the countenance grows pale and sunken.

If with these symptoms there be no indication of pleurisy, pericarditis, or pneumonia, and no evident sign of abdominal infection, it is almost certain that we have before us the commencement of a generalised cancerous affection.

From that period the disease continues under the same form, or with alternations of better or worse. Its progress, which is usually less rapid than that of purulent infection, does not the less, perhaps, if it be possible, even more inevitably lead to the fatal result. If the patient still survive for a few weeks, we may expect to find masses of cancer in one or more of the internal organs. The general symptoms seem sometimes to become lessened for the moment, when a new tumour is about to be established at some distance from the organ which has been subjected to the operation. It would appear as though the poisonous elements, expelled as it were from the circulating system, were there deposited, as if to grant a brief interval of repose to the organism. It is thus that *cancerous infection, acute* in its commencement, may become chronic, and occasion death only after

some months' duration, whilst purulent infection is scarcely compatible with life beyond the period of a week or two.

In the presence of such a complication what can be done? We have positively no therapeutical resource whatever against the general infection of cancer. All that we can do, then, is to combat symptoms for as long a time as possible; and to treat indications as they arise by the employment of the various palliative remedies.

E. *Erysipelas.*—Unquestionably the most common accident after the removal of tumours of the breast, is erysipelas; not that the disease supervenes more frequently in the breast than elsewhere, but that it forms, as it were, the sword of Damocles, suspended over all wounds and operations. It has occurred fifty-four times in 235 cases, and I have observed several tolerably distinct varieties of it.

When induced merely from the presence of the strips of diachylon, erysipelas has the peculiarity of exactly defining the parts which have been covered by the plaster, whilst all the rest of the skin preserves its normal characters.

In this form erysipelas is not serious; it is only a local affection, which often disappears of itself, and dies out in the space of three or four days, and may, in a large number of patients, be remedied by the simplest topical applications.

Whether arising from the strips of plaster or from any other cause, erysipelas of the breast at first presents the appearance of ordinary erysipelas: sometimes preceded, at other times followed, by fever; it almost always assumes the character of flying erysipelas, and it is this last particular that makes it especially serious.

It is true that erysipelas is everywhere wandering, but all parts of the body are not equally favorable to this characteristic of the disease. In the head, for example, erysipelas scarcely occupies more than a week in successively invading the different parts, and after traversing the whole extent of the head and face, it frequently stops without descending to the neck. In the feet, hands, legs, and arms, it disappears of its own accord without attacking the trunk. In the breast, however, this is not the case. In this situation it gradually extends over the chest, in the space of from ten days to a fortnight: there is then nothing to prevent it proceeding to the abdomen, shoulders, thighs, arms, and even to

the extremities of the limbs; nor is it rare to find it ascending the neck and attacking the head.

As it usually remains for three or four days in the same place, and proceeds either by slight exacerbations or with a certain degree of mildness, it can readily be understood that erysipelas may last for a month or more. I have seen it spread over the whole extent of the body, and not disappear completely till after the expiration of six weeks. It is no wonder, then, that some patients are unable to bear up against a disease which lasts for so long a time; and which, from the very commencement, so seriously affects the whole system.

Even simple erysipelas, after the extirpation of tumours of the breast, is a dangerous malady. Besides favouring pleuritic effusions, it may, as I have seen, give rise to peritonitis. Should it occur in a woman whose constitution is already enfeebled, it meets with less resistance than under ordinary circumstances.

Still, as it scarcely lasts for more than three days in the same place, the neighbourhood of the wound is generally free from it at the expiration of a week. If it spare the head, and nothing particular occur in the course of the first week, we may reasonably hope that the patient will recover; but in the contrary case, that is to say, when having traversed the thorax, and having invaded or not the limbs, the erysipelas affects the head, we have every reason for alarm. Enfeebled and already greatly debilitated, the unfortunate patient is soon seized with delirium, and ere long expires. Nothing can exceed the danger when, after having attacked various parts, the disease returns or reappears in some of those situations which it formerly occupied, and in which it had afterwards disappeared. The treatment of erysipelas is the same in this situation as elsewhere. Should pus or other morbid secretion stagnate in some corner of the wound, an issue must be given to them either by incisions, or by the separation of the lips of the wound, if union by adhesion has been attempted, and poultices must be substituted for the other dressings.

If there appear to be nothing pent up it would be useless to destroy adhesions which had already commenced to form: the erysipelas would not be benefited by such a measure, for it will have spread to some distance from the wound at the expiration of from three to four days. Under such circumstances, it will suffice to keep the inflamed parts covered with compresses, saturated with elder-flower water, and inunction with mercurial

ointment, or with fresh lard, is not to be despised, when the redness is intense.

An ointment with the sulphate of iron, or cloths wet with the solution of the same substance, are amongst the best forms of application; but we must be careful not to fall into an error on this subject, since all topical remedies are but of small value. It is by changes in the fluids, and not as a local malady, that erysipelas is dangerous. The wound, too, does not leave us the same liberty of action as regards treatment as in spontaneous erysipelas. Patients who have undergone operation, are not able to bear general bleeding; and experience has shown me the inutility of leeches, no matter in what position they may be placed. The state of the chest will hardly allow us to dream of emetics, and our treatment must consequently be confined to drinks, purgatives, and to regimen.

The proof that erysipelas is not dangerous, in consequence of mere inflammation, is to be found in the fact that the most serious varieties of all are those which locally appear the least intense. I have seen the disease last for several weeks, extend over the whole chest, and occasion death, without the patient's ever having appeared really red. In such cases, the colour being reduced to a clear rose, or simply yellow tint, the erysipelas, in truth, is only characterised by its festooned border, which presents the slightest possible relief upon the surface of the integument.

An external inflammation which were to last only for three days in the same spot would not of itself be a very dangerous malady. It is consequently to the general shock that the practitioner must turn his attention.

Bronzed Erysipelas.—A form of erysipelas which has not attracted sufficient attention, is that which at first occurs in the form of brownish patches, which have a bronzed rather than a red or yellowish tint. I have noticed it upon five or six occasions after operations upon the breast. The affected skin appears to be much thicker than usual, and the erysipelatous parts project considerably upon the surface. In other respects its borders are exactly festooned and limited.

It is, as it were, ordinary erysipelas magnified or seen through a microscope. The patches from the very commencement are large, and accompanied by a train of alarming symptoms. The pulse soon becomes frequent; there is often nausea, and the

patients are alarmed, burning and tormented by thirst. They complain of anxiety or suffocation. Delirium supervenes; and if the patient hold out, gangrenous patches form pretty quickly on one or more of the parts attacked by the erysipelas.

The wife of a gardener, no whom I operated at Montreuil, in the year 1847, for an encephaloid tumour in the right breast, was attacked by it on the second day with so much violence, that, on the sixth she was dead. Madame D—, on whom I operated in the Rue Hauteville, in the course of the same year, died in like manner in the same space of time. The first of these patients was a country woman, of good constitution, and of moderate stoutness; the second was 70 years of age, and of considerable embonpoint.

Both of them had been submitted to the inhalation of the vapour of ether, and I was led to ask myself the question whether this unfortunate result was to be considered as due to the obesity, to the age, or to the condition of the health of these patients, or rather to the etherization. But in the year 1850, I met with a similar case of erysipelas in a young person of very moderate stoutness, who had been rendered insensible by means of chloroform. Still further, the same kind of erysipelas occurred in a man who had undergone the extirpation of a simple fatty tumour, and had not been etherized at all. I am, therefore, quite at a loss to know to what to attribute this singular and formidable variety of erysipelas. What I do know, however, is, that it is extremely dangerous; that it destroys life with great rapidity, even when it remains confined to the chest and belly; and that I am ignorant of any means by which it can be combated.

As a general rule, erysipelas, of whatever form, is more formidable in stout than in thin persons; after fifty or sixty years of age, than at a less advanced period of life; in broken down and debilitated individuals, than in those who are strong, robust, and of resolute character.

It is remarkable that if the patient recover from the erysipelas, the cicatrization of the wound does not require a much greater time than if the disease had not occurred at all. After some days' arrest in the progress of reparation, the wound discharges, and cicatrizes as in patients who have escaped the disease.

F. *Glandular Inflammation.*—The preceding observations should be understood as confined only to erysipelas, properly so called,

and as not at all applicable to diffuse phlegmon, or the glandular inflammation, which so many practitioners daily confound with it.

Glandular inflammation is tolerably rare after amputation of the breast; the patches of red without festooned borders, the sort of scattered tubera, the painful swelling of the glands of the axilla, which characterise and enable us to recognise it, do not, moreover, produce the same dangers as erysipelas. It is a form of inflammation which may be advantageously treated by general bleeding, by leeches, by mercurial inunction, and by emollient topical applications, kept permanently applied to the wound.

6. *Diffuse Phlegmon* almost always depends upon an unfortunate attempt to procure union by the first intention. Should the edges of the wound be brought too closely in contact, whilst the base is kept apart by the accumulation of blood or morbid secretion, it is very apt to occur. Commencing in the deeper structures, in the submammary strata, the inflammation increases, and extends beneath the mamma, which in no long time it isolates, still preserving its diffuse character. The pain is sharp, dull, and then plunging; the skin is sweating, the pulse full and frequent, the thirst intense, the tongue dry; the whole of one side of the chest is painful, hot, dry, red, and swollen.

Under these circumstances, we must, without hesitation, reopen the wound, fill it again gently with charpie, and cover it with a large poultice. Leeches to the painful part must not be spared; and on the slightest appearance of suppuration, we must resort to incisions.

Many cases of diffuse phlegmon are arrested in this way; in some, however, the inflammation from the very first assumes so wide an extent, that the most energetic treatment fails, and the patient succumbs under too extensive an infiltration of pus.

VI.—CAUSTICS.

A cutting operation has always occasioned so much alarm, that practitioners have never abandoned the idea of curing tumours of the breast without it. For this purpose they have resorted to all varieties of caustic; and as they are capable of disorganizing and destroying the tissues, they may, doubtless, in

some instances, be resorted to for the purpose. In practice we have a large number of them. The question in the present day is less to ascertain whether cancers *may* be cured by caustics, than whether they *ought* to be so treated. The first fact is neither contestable nor contested. A cancer can unquestionably be destroyed through the agency of chemical substances. It is the second point which is in question.

§ 1. VALUE OF CAUSTICS IN GENERAL.—Two circumstances militate in favour of caustics in the eyes of the public. First, patients are less terrified by them; second, their action is considered less painful than that of a cutting instrument.

Upon this subject, however, the unfortunate patients are deceived. No species of caustic can destroy a tumour of the breast, without occasioning acute and long-continued pain. As, however, in the present day ether can always be administered, caustics must lose their prestige, for the slowness of their action deprives them of its benefits. I must add, that since the pain of them must be kept up for whole hours, or even for a day, and renewed at each fresh application of the remedy, the agony they occasion is in some cases so violent, that I have known patients find it more insupportable than a cutting operation to which they may previously have submitted with much dread.

Quacks and even physicians, knowing how greatly patients dread the knife, sometimes yield to their want of courage, assuaging their fears, and hoping to gain their confidence by promising to cure them without operation. Almost all the remedies, specifics, and resources of these quacks are genuine caustics, and I may be permitted to add, that the fashion of employing caustics depends to some extent on the circumstance, that those who make use them are usually incapable of handling a cutting instrument. A mode of treatment which requires no anatomical knowledge, which demands no familiarity with operative surgery, naturally commends itself to these practitioners, since it is not given to all the world to be capable of practising operations.

A. *Advantages.*—I would not by any means be understood as saying that no surgeon has in good faith attributed real advantages to caustics, or that no scientific evidence can be quoted in their favour.

As they destroy without dividing the tissues, and transform

the structures which they disorganize into eschars, causties open no vessels, give rise to no hemorrhage, and require no ligatures, dressings, or special bandages. If the wound which they leave does not cicatrize in proportion as the eschars become detached, it, as a general rule at least, discharges, and cleanses itself very rapidly after the separation of the mortified tissues.

The absence of division of the vessels renders phlebitis or purulent infection less probable than after operation by the knife. It has been stated, also, that causties are less liable to give rise to erysipelas, either in consequence of their peculiar action, or because they enable us to dispense with the use of plasters. Some persons have even gone so far as to maintain that they offer greater opposition to the return of the disease than a cutting instrument.

The majority of these advantages are by no means demonstrated. Purulent infection, as I have seen, may occur after the employment of causties, and they offer no guarantee against erysipelas. A pointed illustration is furnished by the case of one of our young colleagues, who some years ago was removed from the cause of science, and from the practice of his profession by a premature death.

In a remarkable essay, this surgeon had long insisted upon the innocence of causties. He had endeavoured to prove in particular, that causties, in the treatment of wounds or varices, did not expose the patient to erysipelas.

Being himself attacked with a small tumour of doubtful nature in the breast, he submitted it to cauterization, and, as though nature were desirous of punishing his presumption, the caustic rapidly gave rise to wandering erysipelas, followed by serious symptoms. Were other facts necessary to obviate mistake upon this subject, I could quote a certain number from my own practice, but where would be the use? Is cauterization of the arm or leg never attended with erysipelas? Amongst other cases in the hospital, I have seen the cauterization of a cancer of the occiput give rise to erysipelas of the trunk, and the cauterization of a steatomatous tumour in one man, and the cauterization of a syphilitic ulcer behind the ear in another, produce the same kind of inflammation. Is it not the essential nature of burns to give rise to a sort of erysipelas around them?

Purulent infection being somewhat rare after the removal of the mamma, I am unable from personal experience, to say,

whether caustics are more or less calculated to give rise to it. It is certain, however, that they do not absolutely exempt the patient, for I am acquainted with at least two examples of this species of infection occurring during the destruction of a tumour in the mamma by caustics.

At first, one does not see why the return of the disease should be less likely after caustics than after extirpation with the knife. No theoretical reason can be adduced in their favour on this head, and it does not seem to me, that there is anything in the practice or in the writings of those, who by preference make use of caustics, to justify or authorise our admitting such a pretension.

I have often employed caustics, and I must allow that the thought has several times occurred to me, that they preserve the lymphatic glands from secondary cancer more than extirpation. On two occasions, I found enlarged and indurated axillary lymphatic glands to diminish in a marked manner, instead of increasing during the time that I was treating the cancer of the breast by caustics. The same thing occurred with the submaxillary glands, whilst I was treating a case of cancroid of the lips in a similar way. As, however, facts to the contrary have occurred in my practice, and as I have also seen the same thing after extirpation, it may be that these were simple coincidences. Nevertheless, the question should be further investigated, and submitted to a more detailed experimentation.

B. *Disadvantages.*—If the advantages attributed to caustics are for the most part very contestable, there is no doubt whatever, on the other hand, of their disadvantages. It is strange enough, that the reason formerly adduced in favour of caustics may now be turned against them. Their principal advantage, in fact, in the estimation of patients, an advantage too which is insisted upon with great self-complacency by those quacks who recommend them, consists in the comparatively small amount of pain induced by their operation. Now, in the first place, this is not true. There is not amongst caustics that are active enough to destroy a cancer, a single one capable of useful employment, which does not occasion infinitely more pain than a cutting instrument. This fact, however, has at last been recognised by the public, and those persons were always ill advised who maintained the contrary.

Now-a-days, however, the position of things has changed.

Patients are as well aware as their attendants, that etherization permits the performance of the most serious operations without the production of pain.

A cancerous mamma can be removed so rapidly, that there is no danger in continuing the etherization till the close of the operation. The application of caustics, however, must be continued for hours, or even for days, and there is no opportunity for the employment of chloroform. It consequently happens that patients refuse to submit to caustics for fear of pain, just as formerly they insisted upon their employment in the hope of diminishing suffering.

A conscientious practitioner can never maintain that they are preferable to a cutting instrument in the case of non-ulcerated, still moveable tumours, more or less deeply situated under the integuments. Their action is always tedious and unequal. We have to apply them, in the first place, in order to destroy the integuments, and subsequently once or several times more in order to slough out the tumour.

The eschars require from a week to twenty or thirty days to become detached. If there are three or four applications of the escharotic to be made, we must proceed rapidly with them in succession, or the first will be of no use. Even after the last eschars come away, all is not finished; we have then a wound similar to that after a cutting operation, the edges of which cannot be brought in contact, and which cannot consequently get definitely well until after the expiration of a month, or even more. The consequence is, that caustics require two or three months to cure a patient who might have been definitely relieved of her cancer in the course of a fortnight or three weeks.

In the case of a cutting operation, it is often possible not to sacrifice any portion of the integuments; at least, we can almost always preserve a portion of the skin covering the tumour; the wound, therefore, may unite by adhesion, or at any rate it is easy to bring its edges together in reunion by the second intention.

As caustics, on the contrary, must be employed to destroy the integuments as far as the roots as well as beyond the circumference of the tumour, they cannot effect this before it has been as it were denuded, and they thus occasion enormous loss of substance necessarily followed by large cicatrices.

This inconvenient result is especially apparent when caustics

are applied to scirrhus, and to radiated or ramous scirrhus in particular. In this form of cancer, in fact, the tumour sometimes sends out its roots, so far that in order to destroy the whole extent of the disease, the escharotics must be employed so as to denude a large portion of the chest, whilst after incision it is easy to root out the disease, at the same time preserving the sound portions of integument.

With caustics, therefore, we have prolonged, acute, and repeated pain, to assuage which, we cannot resort to etherization. The duration of the treatment is two or three times more considerable than with the knife; the skin must necessarily be destroyed beyond the limits of the tumour, from which there result large cicatrices and more or less deformity.

With the knife, pain may be avoided: recovery is often rapid; the integuments may be preserved, if they have undergone no degeneration, and there results a straight, sometimes linear cicatrix, and usually but little deformity.

c. *Real value.* — It cannot be denied, however, that caustics do possess some advantages. As they do not give the idea of an operation, they are less terrifying to the patients, and their application will be permitted much more cheerfully, and with infinitely less effort than the knife. As they destroy the tissues bit by bit they occasion no loss of blood, and they disturb the system less than operation properly so called. Patients who submit to this treatment are not compelled to keep their beds, or to consider themselves ill. The after-dressings require less care, and do not absolutely call for the assistance of the surgeon. The wound generally becomes cleansed rapidly, after which, cicatrization proceeds without delay. Without also entirely obviating erysipelas, phlebitis, or purulent infection, as has been stated by some surgeons, there is nevertheless reason to believe that they are somewhat less liable to these unfortunate complications than cutting operations.

It will be evident, therefore, that no definite judgment can yet be given as to the real value of caustics in practice. The cases that have been published upon the subject having come from men of egregious partiality, and of notorious ignorance and incapacity, can have no weight, and the question of caustics in the treatment of cancers must consequently be left undecided.

I have paid much attention to the subject, since the year 1830, and notwithstanding the sort of general condemnation into which they have fallen, I have not hesitated to give them a free trial both in hospital and in private practice, and I am glad to find that M. Maisonneuve has followed the like course.[1]

My experience shows me that they should not be altogether rejected as curative measures. They are preferable to a cutting instrument: 1st, when the cancer is ulcerated in patches, and is rather sprouting than narrowed; 2d, when, even with a cutting instrument, it would be impossible to preserve a portion of the integuments of the part invaded by the tumour; 3d, in all cases in which the cancer is fungous, exactly bounded, and the patient has an extreme dread of the knife; 4th, ulcerated, cavernous, and disseminated scirrhus may be treated with caustics more advantageously than by incision; 5th, the same observation applies to ulcerated cancers which are adherent to the summit of the axilla, or to the clavicle, or extend to the neighbourhood of the bones.

Except in these cases, the caustics should be employed only at the request of the patient and her family; and it should not be forgotten, that the facility of their application has caused many persons who are unable to manage the knife, to attribute to them unreasonable value, in order to allow of their recommending them in all cases.

§ 2. PARTICULAR CAUSTICS.—The caustics that have been made use of are very numerous and diversified. In the first place, we must exclude all caustics of feeble power. No good can be done by attacking a cancer with nitrate of silver, nitrate of mercury or ammonia, hydrochloric acid, red precipitate, or the salts of iron, &c. We must restrict ourselves to the concentrated acids, potash, arsenic, chloride of zinc, or chloride of antimony.

Persons who have written upon the subject, have spoken as if these various substances differed only in their various degrees of energy. If this were so, it would almost be a matter of indifference whether we employed this or that caustic in preference to any other. This mode of looking at the subject, is, however, entirely contradicted by truth. Each caustic exercises

[1] 'Leçons Cliniques,' p. 54—67.

an action upon the tissues peculiar to itself. Each affects, in its own way, the parts to which it is applied; and each forms a special agent which must be investigated as a particular remedy.

A.—Thus, *the butter of antimony*, which has great power, and acts deeply and rapidly on the tissues, is but rarely employed in consequence of its rapid deliquescence, and because, on this account, it is difficult to direct and limit its action.

B.—The *Vienna paste*, which is formed by a mixture of nearly equal parts of lime and potash, moistened before use with a little alcohol, has the advantage of not spreading much, and of being readily confined to the parts where it is applied, within a boundary of diachylon or lint. But it has the inconvenience of rapidly giving rise to a sanguineous exudation which raises it from the surface, and of provoking considerable reaction.

The Vienna paste, therefore, has seemed to me preferable only for scarifying non-ulcerated skin, for preparing the way as it were for one of the causties of which I am about to speak.

However, if the cancer be not very large, the Vienna paste will sometimes suffice in spite of the ulcerated or fungous state of the tumour. I have, also, advantageously employed it in order to cauterize certain cavities, by charging with it a ball of lint, which I fix at the bottom of the sore, and which may be left there without inconvenience till the next day.

C. *Caustic Potash* itself is not to be despised in certain cases. A portion may either be grasped in the forceps, as M. Bourgeois (d'Etampes) appears often to do, or we may form it into sticks like those of nitrate of silver, which are to be placed in tubes or rolls of lead. Under the employment of this substance, the tissues speedily become converted into a sort of soap, either by keeping it in contact with the parts for some minutes, or by light and continuous touchings. It is difficult, however, to act in this way upon a large surface, and it is necessary to scrape away and remove the tissues that have been destroyed in order to keep re-applying the caustic till the effect required is produced. At a later period, also, we are inconvenienced by a sanguineous exudation just as with the Vienna paste, so that, in fact, the caustic potash is preferable only in the case of small or deeply-seated cancers.

D. The *solidified Vienna caustic,* known under the name of Filhos caustic, which is also to be formed into sticks, contained in a tube of lead, has the same merits, and is open to the same objections as the potash properly so called. All causties which have potash as their basis, have the inconvenience in common, of easily giving rise to sanguineous exudation when applied to living tissues. The same objection does not apply to nitric and sulphuric acid.

E. The *monohydrated nitric acid,* which acts rapidly and deeply, is naturally difficult to apply. I have, however, employed it upon some occasions by saturating lint with it, and then, by means of forceps, keeping it in contact for some minutes with the parts that it was desired to destroy.

A practitioner in Paris, Rivaillé, has, in fact, formed a sort of specific remedy of it, which he considers superior to all other causties, and which M. Maisonneuve frequently employs.[1] It is quite true that when it is formed into a kind of paste by means of lint, tow, wadding, or such substances, the nitric acid can readily be carried to all the surfaces, and that, as its action is, so to speak, instantaneous, we may hereafter employ it more frequently than we formerly did.

F. *Black or sulphuric Caustic.*—A caustic which I have frequently employed, and from which I have obtained remarkable results, is sulphuric acid. As, however, in a liquid form, it is difficult to manage, I have formed it into a paste with saffron. The acid is to be mixed with the saffron by trituration in a mortar, so as to make a smooth paste, which soon assumes a beautiful black colour.

It is important that the paste should be neither too thin, nor too compact and thick. It must form a sort of bouillon, which readily keeps cemented together. This caustic destroys whatever comes in contact with it; the unaffected integuments as well as the ulcerated tumour. A layer of variable thickness, according to the amount of tissue to be destroyed, is to be spread upon the part, and the caustic allowed to remain until it has become dried, and transformed into a black or brown very hard eschar.

The whole must be exposed to the air for at least four or five

[1] Op. cit., p. 65.

hours; and in this way we produce an incredible diminution of the tumour, especially when it is ulcerated and fungous. I have seen fungous encephaloid cancers larger and thicker than the fist, completely subside in this way, and become reduced to the level of the surrounding parts, in the space of twenty-four hours. The eschar shortly sinks in, and forms a black, dry excavation, as if carbonized, which remains in place of the tumour.

Instead of producing a loss of blood, this caustic rather prevents hemorrhage. The pain which it occasions is acute and of long continuance, but it neither produces inflammation nor swelling. On the succeeding day, or day but one after, the eschar will be found perfectly dry; the integuments in the neighbourhood neither red nor swollen, and hardly more tender than the sound parts of the body. In one word, we might say that the patient was cured, and that the eschars rested upon a cicatrix that was already formed.

The eschar remains in this position for from eight to twelve days; it then begins to get separated without softening much at its circumference, so as to become entirely detached towards the fifteenth or twentieth day. Tolerably frequently, also, cicatrization progresses at the same time without much constitutional disturbance, and the whole wound will sometimes be completely well a week later.

No other caustic has seemed to me to possess such advantages. Its action is rapid, energetic, and as deep and extensive as we can desire; easily limited without giving rise to any bloody discharge, and, after the succeeding day, producing neither inflammatory reaction, redness, pain, nor swelling, on or around the cicatrix. We are sometimes astonished at observing a vast fungous surface, which daily gave exit to a large quantity of ichorous discharge, become transformed, in less than twenty-four hours, into a black dry crust from which there is henceforth no secretion whatever.

Unfortunately, however, this caustic is often difficult to apply. The saffron forms such a light material that it adheres more readily to the instruments which we are employing, than to the tissues to which it is applied. I hoped to remedy this inconvenience by substituting lycopodium, charcoal, or asbestos for the saffron, the price of which, moreover, is somewhat high; but I have had no reason to be satisfied with these trials, which seem to have succeeded better with M. Maisonneuve. On the other hand,

as nothing can resist the action of this caustic, it is difficult to limit it to the surface to which we desire to apply it. It burns up the lint and linen or diachylon plaster so rapidly, that the neighbouring parts can scarcely be protected by these different substances. We must employ, in order to arrest its action, either glass, china, or porcelain, or what is more convenient, a roll of soft wax.

As, moreover, the caustic at first attaches itself very little to the tumour, it is almost impossible to fix it on those organs the surface of which is inclined, or elsewhere than in those parts where it can be kept in a horizontal position. The necessity, too, of maintaining the cauterized part immoveable and exposed to the air, causes the employment of it, in children, and persons who are not docile, to be somewhat dangerous. Perhaps, however, repeated trials will enable us to overcome these inconveniences. There is no doubt that it would then form one of the most useful caustics in the materia medica.

6. *Chloride of Zinc.*—A caustic which has rapidly acquired a certain reputation, is chloride of zinc. It was first spoken of in Germany, by Haenek, of Breslau, as an excellent caustic in the treatment of cancers, but was unknown in France for this purpose, until M. Canquoin announced *to the public* that he cured tumours of the breast *without operation,* by means of a new kind of plaster. This plaster, the nature of which he kept secret, was examined by the chemists. M. Trousseau soon discovered its composition, and it was ascertained that the caustic of M. Canquoin was composed of chloride of zinc and flour in determinate proportions. Fifty parts of the chloride with a hundred parts of flour, for instance, with a little water or mucilage, enable us to form a smooth, well-mixed, extensible paste, of a grayish or reddish brown colour, which, when it is well made, has something of the softness and elasticity, and even colour of caoutchouc. This is one of the most energetic of caustics. By means of it, the tissues can be destroyed to a considerable depth. Its action is also easily measured. With a plate of caustic of two millimetres in thickness, a sear of nearly four millimetres will be obtained. For a sear of two fifths of an inch in depth, it is necessary to have a layer of the zinc five or six millimetres in thickness, to be renewed or not according as we desire to act deeply or superficially on the parts. It is also a caustic which can easily be managed, the action of

which is exactly limited to the tissues touched by it; and which acts, so to speak, like a punch; which can be placed over the tumour as easily as a piece of scar-cloth; which is not liable to spread, and is scarcely more diffluent than the thicker kinds of plaster; and which, from these qualities, may be applied in all situations, in the deepest cavities, upon irregular surfaces, as well as upon the projections of tumours.

As it produces no effect upon the healthy skin, which may be intact, or upon mucous membranes covered by their epithelium, it may be spread, cut, parcelled out, or moulded, to any extent by the fingers; and it can be easily cut into any desired form with the scissors, just like a piece of linen.

Its elasticity, its softness, and the fact that the air produces no effect upon it, permits of its being carried in the pocket without any inconvenience. The zinc paste has also another great advantage. Its action is completely confined to the tissues. It is in no way absorbed, and consequently is not liable to produce any general constitutional effect. This advantage, which it enjoys in common with the sulphuric and nitric acids, and with the chloride of antimony and the different preparations of caustic potash, in great measure explains the reputation which M. Canquoin's paste still enjoys.

Its employment, however, is not wholly without difficulty and inconvenience. For instance, as it does not act upon the epidermis, it is necessary that the skin should be removed from the part to which we desire to apply the zinc. Without this precaution, it will remain for an indefinite period as an inert substance, without producing the slightest alteration in the tissues. When applied to fungous growth, it slips, and cannot be retained in its place without difficulty, and the discharge to which it gives rise may interfere considerably with its action.

There is no doubt, also, that it is one of the most painful caustics; the suffering which it occasions will often persist for more than twenty-four or thirty-six hours. As the caustic material itself is completely enveloped in the paste, it can only act slowly, from which there must evidently be a proportionate prolongation of pain. The majority of patients to whom I have used it complained so greatly, that they had no hesitation in submitting to the use of the knife rather than re-commence its application.

Still it has seemed to me preferable, when it is necessary to

act upon the root of a thickish tumour, which is either solid or large, and also when it is necessary to destroy a scirrhus of some extent.

After removing the epidermis by means of a blister, or destroying a thin layer of the integuments with Vienna paste, we should cut with the scissors a layer of the zinc paste the size of the parts which we desire to destroy, taking care to give to it a form and thickness proportionate to the effect intended to be produced.

This layer, which is to be applied exactly in the same way as common plaster, is then to be covered with lint or compresses, and maintained in its situation by means of an appropriate bandage. In a short time pain, which is at first dull, then more acute, then deep and penetrating, manifests itself, and does not cease for a day or two, unless indeed the remainder of the caustic paste be not removed at too early a date.

It is desirable not to remove the bandage for twenty-four hours, when the paste will be found reduced to a sort of pulp somewhat resembling bread poultice. The affected part is then to be cleansed of all secretions or matters not adherent to it, after which it is to be covered with a simple poultice.

The cauterized structures swell, get painful, and the seat of considerable local reaction. After some days this action diminishes and becomes more and more localised, but the eschar hardly commences to separate until after a week or ten days, and often does not definitely fall till the fifteenth or twentieth day.

Should the whole tumour have been affected, the wound discharges, fills up, and cicatrizes with great rapidity. If masses or patches of doubtful nature remain behind, they are to be treated separately by means of fresh portions of the paste, which is to be managed in the same way as the preceding.

Instead of one part of the chloride to two parts of flour, we may employ the caustic in equal parts, or with only a fourth, according as we desire to render it more or less energetic. It should not be forgotten, however, that it requires some practice and manipulation to render the zinc paste perfectly manageable, and that all dispensers do not possess this sleight of hand to the same degree.

II. *Arsenic.*—One of the oldest caustics in case of cancer is arsenic. Fusch, who is spoken of by Haupeville, employed the

arsenious acid so early as the year 1594, in the form of a powder, which was mixed with soot and snake-root. Fernel speaks of a mixture of white arsenic and corrosive sublimate, which he also employed to destroy cancer. In the present day, too, there are a great number of preparations having arsenic for their base, which are known under the name of anti-cancerous caustics. The most celebrated and the best known are those of Rousselot, of Frere Côme, and of Antony Dubois, to which must be added Hellemund's ointment, the Italian powder, and Dupuytren's powder.

Dupuytren employed four parts of white arsenic, mixed with ninety-five parts of calomel; but this caustic is not now employed in practice, for though it causes extreme pain, its activity is insufficient.

Hellemund's ointment is composed of eighty-nine parts of the powder of Rousselot, incorporated with a little acetate of lead, laudanum, extract of hemlock, and Peruvian balsam, with thirty-two grammes of simple ointment. This preparation occasions less pain, but produces much less effect than the other arsenical caustics.

The Italian powder, which is composed of equal parts of arsenious acid, of bole Armenian, and of bruised lime, forms a very energetic caustic, which occasions violent suffering, and considerable swelling of the neighbouring parts. In Rousselot's powder, there are eight parts of arsenic, sixty-four of cinnabar, and sixty-four of dragon's blood.

The powder of Frère Côme consists of sixty-four parts of cinnabar, sixteen of dragon's blood, eight of arsenic, and sixteen of burnt savin. That of A. Dubois is a mixture of four parts of white arsenic, sixty-four of cinnabar, and thirty-four of dragon's blood.

A paste is to be made of these powders, and especially with that of Dubois, by moistening them with saliva, and triturating them with a spatula. The caustic is to be spread like ointment, somewhat thickly on the surface which it is desired to destroy, and then the whole is to be covered with a thickish layer of cobweb. In this way, there will in a short time be formed an eschar, usually of considerable depth, and always proportionate to the thickness of the layer of paste that has been employed.

No form of caustic occasions more local reaction than those composed of arsenic. The whole neighbourhood of the affected part swells and inflames, as though it were the subject of a kind

of phlegmon. The pain is very acute, and there generally results pretty intense fever, headach, and often nausea. However, when once this invasion has passed by; that is to say, after four or five days, the eschar, which was at first somewhat moist, dries up and retracts. When the time for it to become detached has arrived, it is not uncommon to find the wound partly cicatrized, so that the case will sometimes be terminated from the moment that the eschar has fallen.

The arsenical caustics are, without doubt, the most dangerous of all. This is well ascertained in the present day, and it has been noticed in all ages, that a portion of the arsenic may pass into the blood and poison the patient. Well authenticated cases prove that death has occurred several times in this way. Nevertheless, as there is, at least generally, but a small proportion of arsenic absorbed, and as the caustic is otherwise excellent, it has never ceased to be employed by some persons.

A distinguished hospital surgeon of Paris, M. Manec, has even attempted to revive its popularity. Experience, and numerous cases under the care of this practitioner, have led him to assert two facts of great value: 1st. That it is, as it were, possible to determine beforehand what quantity of arsenic will be absorbed out of the mass of arsenical paste employed; 2d. That the arsenical caustic, such as he employs, which is only a modification of the powder of Frère Côme, has so strong an affinity for abnormal tissues, and such a predilection, that it searches them out in the very midst of the healthy tissues, and poisons and destroys them.

"The arsenical paste which has been recommended for superficial cancers," also says M. Manec, "may be successfully employed even when they are of considerable thickness. Its action is not simply escharotic, as has been supposed, but beyond the eschar it destroys the vitality of the morbid parts over an extent which may range from one and three fifths to two inches, and sometimes more. These preserve their proper texture amidst the parts which have not been destroyed, and become separated from the sound tissues by an eliminative suppuration, which occurs successively around them.

"It is remarkable that this powerful remedy, which destroys the vitality of thick and condensed pathological structures, when applied in equal amount to superficial corroding ulcers, destroys merely the morbid tissue, however thin it may be, and has no effect upon the healthy parts.

"We may guard against the accidents that might result from the absorption of too large a quantity of the arsenic, by carefully confining the arsenical paste to a surface never exceeding the dimensions of a two-franc piece, no matter how great an extent the disease may cover. The quantity of arsenic which may be absorbed under these circumstances, can only occasion trifling disturbance to the vital functions.

"By analysing the urine every morning, I am enabled to ascertain the period at which a fresh application of the caustic may be made without danger.

"When the absorption has been rapid, the elimination by the urine will cease at from the fourth to the sixth day. It will be prolonged to the seventh or the eighth day if the absorption has taken place slowly, as occurs in those cases in which it has been applied to hard scirrhus.

"In eight or ten days, then, after the first application of the arsenic, such portion as has been absorbed will be eliminated, and the urine will no longer be found to contain it. We may then safely proceed to a fresh application, which, if confined to the limits pointed out, will not, any more than the first, give rise to symptoms of poisoning."

The good sense of M. Mance has induced me, on his recommendation, to apply this caustic in several instances, but hitherto it has not appeared to me to act in any manner different to the caustic of Rousselot, or to the paste that I formerly saw applied by Mons. A. Dubois, and which I have often employed myself. However, I shall still continue to give it a trial.

As M. Mance also does not deny that a portion of the arsenic may be absorbed, practitioners will always have some difficulty in avoiding the fear, that in employing this caustic they may run the risk of poisoning their patients. For my own part, when I have occasion to employ an escharotic substance, I think it more natural to have recourse to nitric acid, to the paste made with sulphuric acid, or to the zinc paste, which are not exposed to this danger; which possess an equal amount of energy, do not occasion more pain, and whose action appears to me quite as readily limited, and which consequently present the advantage of the arsenical caustic without its dangers.

Although this author has not found any ill results to follow the application of this caustic, M. Maisonneuve[1] has been less for-

[1] 'Leçons Cliniques,' p. 60.

tunate, notwithstanding that in all points he conformed to the directions of M. Manec. Like myself, he has observed a very painful kind of inflammation to become rapidly established around the eschar, and sometimes at a considerable distance from the cauterized part.

There are, however, two properties which would render it preferable to any other, if they were correctly established as appertaining to it. If it could be shown that arsenic concentrates its action upon the morbid tissues alone, it would become the most precious of all caustics. If, when it enters into the torrent of the circulation, it should preserve this elective action, does it not afford the chance of destroying the ultimate molecules of the tumour, and of setting aside the fear of return by modifying the whole economy ?

1. *Chloride of Gold.*—Chloride of gold dissolved in aqua regia has also been spoken of; but Récamier, who at first employed this remedy, does not seem to have held by it, and no one that I am acquainted with now makes use of it. It is a caustic difficult to manage, and presents no advantages over the others.

Caustics derived from the vegetable kingdom, such as certain varieties of ranuncula, certain of the euphorbiaceæ, colchicum root, &c., have been tried. A work has just been presented to the Académie de Médecine, by a practitioner in the country, in favour of an ointment composed of the bulbs of colchicum root, lard, and sulphate of zinc, in certain proportions; but these are remedies which I have never found to do any good, and which, according to all appearance, have no claim to be substituted for the caustics spoken of above.

J. *To recapitulate.* The Vienna paste will be found to be the best form of caustic for the destruction of a non-ulcerated tumour of little thickness. It is to be surrounded with a border of diachylon plaster, and left in contact with the part for ten minutes. Should the tumour be thicker, or large and bossilated, the preference should be given to the zinc paste, whether the skin be ulcerated or not.

For fungous tumours, large or small, the paste made by sulphuric acid has many advantages over others, especially if the part to be cauterized can be placed in a horizontal position, that

is to say, in the different parts of the limbs or trunk. Its employment, however, is difficult both in the cavity of the axilla, in the neighbourhood of the jaws or eyes, and in the mouth.

The caustic potash and the solidified Vienna paste is most desirable in the case of irregular or deep-seated cancers, whenever it is important to produce a rapid effect upon a determinate point. I do not see any reason why, in the absence of more ample information, we should employ the arsenical caustics to the exclusion of the preceding.

κ. *Specific action of certain Caustics.*—As it is not absolutely impossible that the powerful caustics may produce some important action in the tissues around them; as the healthy tissues rapidly undergo an action as if to expel what is irritating them; and as it is not impossible that after this has been effected, some amongst them may offer a greater opposition to the extension of the cancer, than if the knife had been employed; and as, in short, they at first jeopardise the life of a patient less than an operation properly so called, I am far from definitely rejecting their employment.

They are, moreover, necessary in preference to a cutting instrument, when the case is one of fresh vegetations, and doubtful formations in or around wounds resulting from the removal of a cancer. We may, also, advantageously make use of them as palliatives, in order to destroy fungous growths and vegetations which so frequently arise from the surface of cancers that cannot be operated upon; and if to these we add the flat ulcerated cancers, and those cases in which the patients will not, under any circumstances, hear of a cutting operation, we have at once a pretty numerous series of cases which require or permit the employment of caustics. These considerations it appears to me will be sufficient to induce thoughtful practitioners to pay considerable attention to this class of remedies, and will also, I trust, afford an apology for the preceding pages.

VII.—CONGELATION.

Perhaps I may be expected to say something on this subject also.

Refrigeration, which has long been made use of in different ways in practical medicine, has recently been brought forward

under a new form by Dr. Arnott, of Brighton. This gentleman states to me that, having obtained a rapid and fleeting congelation by means of a mixture of pounded ice and salt, he has treated a large number of inflammations with it. He maintains that when kept in contact with the affected organ for some minutes, this frigorific mixture rapidly produces the subsidence of erysipelas, and, amongst other things, of diffuse phlegmon.

By means of this agent we may also produce a genuine local anæsthesia. I have employed it for the purpose of tearing away an inverted nail, for the operation of firing, for incisions which merely extended through the integuments, and for the puncture and excision of certain cysts.

I am not about to dwell upon the various cases in which I have thought it right to try this remedy, nor upon the various experiments to which I have submitted it, nor upon those which at my instance have been carried on by MM. Foucher and Béraud, in order to ascertain the value of congelation; nor am I going to speak of the general results obtained from it. I am of opinion, however, that it may be employed as a palliative, if not as a curative measure, in certain cases of cancer.

Since a mixture of ice and salt rapidly freezes the parts to which it is applied, and deprives them of sensibility and circulation, why may we not use it also to produce the mortification of certain forms of tumours? If, after having congealed the tissues for two or three minutes, we remove the freezing body, the vitality of the part is not long in returning; but if the mixture were continued for a quarter of an hour, instead of two or three minutes, the mortification would probably be complete.

There is every indication that patches of disease, and ulcerated cancerous tumours, vegetations, or encephaloid fungous growths, may be destroyed in this way. In this point of view, ice and salt have an evident advantage over the caustics; their action being instantaneous, the boast of immediately curing cancer without operation and without suffering, will cease to be the statement of a quack. Although I have employed it but a small number of times in the case of cancer of the breast, the results that I have obtained lead me to the belief that this remedy should not be rejected without examination, as an assistant to caustics.

Four parts of well pounded ice, and one or two parts of bay salt, form a good mixture. The whole is to be put into a bag

of fine muslin or gauze. The part to be frozen is then to be covered with this bag, which is to be continually applied and removed, so that the ice may not have time to become heated by its contact with the living parts. In the breast, also, the operation requires certain other precautions. The tumour must be exactly included in a solid framework of linen or lint, and the liquid ice must be carefully removed as it flows, in order to guard the parts around. The frigorific mixture will, ere long, congeal the parts, and the patients soon begin to complain of a sensation of cold, which rapidly gives place to a feeling of absolute insensibility.

The parts become blanched, assume a dead colour, and harden, and should the congelation be continued beyond a quarter of an hour, it transforms the tissues into a genuine eschar, which, at a later period, will be eliminated by inflammatory reaction. It may be feared, however, that it may not be equally easy to limit, direct, and control the congelation as readily as caustics, in consequence of the unavoidable diffusion of the freezing mixture; but there can be no doubt that means will be found to regulate its action, if once its efficacy be well ascertained. As for the moment, at least, it checks all flow of blood, discharge, or other fluid, it is a remedy which I have several times advantageously employed in ulcerated cancers, and to fungous encephaloid.

Not to pass beyond the limits of strict observation, however, I must admit that congelation, as an assistant to caustics, is still a remedy which must be considered rather as requiring further study than as positively investigated.

VIII.—RETURN.

Even when all untoward circumstances have been happily got over, when no unpleasant symptoms have presented themselves, and the wound itself has entirely cicatrized, the unfortunate patient cannot yet consider herself as entirely cured. There always remains the sad prospect of a return of the disease, when the operation has been had recourse to in the case of genuine cancer.

§ 1. PREVENTIVE MEASURES.—Practitioners of by-gone ages, and a considerable number of physicians and surgeons of our own day, believe that it is possible, by means of certain precautions,

and certain forms of treatment, to prevent the return of the cancer. Some hope to attain this end by the aid of medicines, said to be curative of the disease. When once, say they, cancer has become established, it will prove rebellious; but, when remedies are employed before the recommencement of the disease, a fresh manifestation of it may be prevented. Others submit the patients to depurative medicines. All alterative drinks, have, at one time or other, been popular for this purpose. The decoction of dulcamara, of clotbur, of the patience-root, and sarsaparilla, are daily prescribed with this object. Repeated purgatives, and the extracts of different plants, have at times had numerous advocates.

A. *Setons.*—An opinion is very generally entertained that, after the cure of a cancer, the patient requires the establishment of some drain. Patients themselves are generally the first to ask for the application of a blister, or the cautery to the arm.

It is unfortunately true, however, that nothing of this kind has the power of preventing the reproduction of the cancer. I have seen these measures made use of in a large number of patients who did not escape the return of the disease, whilst several others under my observation remained well who had not employed them.

There is a delusion on this subject, which, perhaps, it may be well not to dissipate in the case of the patients themselves, but which the physicians should never countenance.

We know of nothing, absolutely nothing, which, in the present state of therapeutical science, can prevent the return of cancer; and it is after having tried, and frequently uselessly tried, the different remedies that have been proposed at various periods, that I consider it my duty to entreat my medical brethren to discard any faith which they may have retained in them.

B. The following is the only course of proceeding that has seemed to me possessed of a certain amount of utility. I apply six or ten leeches between the axilla and the cicatrix, at first every fortnight, and, subsequently, every month. At the same time, I administer a purgative each week, and two or three glasses of an alterative drink daily. The patients should also take a mucilaginous or emollient bath once or twice a week. It has appeared to me that in patients who have been treated in this way, the disease either does not return at all, or does so less

rapidly ; but this, I greatly fear, is only a supposition founded upon simple coincidences.

c. *Syphilization.*—What shall I say respecting the strange proposition which has recently been made, viz., that to prevent—what do I say—that to cure cancer, it will be sufficient to syphilize the patient, to submit her to an artificial syphilitic infection? This proposition, which has been seriously put forward in some of the medical journals, and which has even been debated in the Academy, is of such an extraordinary character, that I must at least venture to say a few words about it.

Cancer has such marked characters, both in its origin, in its evolution, and in its material composition, that it is difficult to question its specific nature. In consequence of this, I will not deny that there is some reason to suppose that there may exist in nature some principle contrary to it, and that one day or other we may discover this preservative, as persons have succeeded in discovering the antidote to the smallpox. I am also less disposed than almost any one, to reject, without examination, investigations instituted with this object; but the fact that the principle itself may be accepted, will not authorise, without discretion, all applications that may be made of it.

Now what sense is there in the idea of infecting with syphilis patients attacked or menaced with cancer? What foundation is there for maintaining that there is any antagonism between syphilis and cancer? Has it not been shown by facts and cases without number, that cancer affects individuals who have on one or more occasions suffered from syphilis, as readily as those who have remained free from the disease? Who is ignorant that patients suffering from cancerous tumours contract syphilis like others if they are exposed to it? What experience is really necessary in the presence of these results, which observation has so frequently placed beyond doubt?

A man who has been affected with syphilis is no more exempt from cancerous disease than any other person.

A patient actually suffering from cancer will contract the venereal disease as readily as any one else.

Syphilis and cancer occurring in the same individual seem to stimulate and to exasperate, rather than reciprocally to annihilate each other.

The justiee of these three propositions I have ascertained upon an infinite number of occasions.

If the thing were as completely harmless as vaccination by cow-pock matter, I do not know that there would be any inconvenience in allowing this freak of experimentation to pass without question; but as syphilis may be followed by serious consequences, it appears to me that we are not justified in suggesting it to unfortunate patients for the purpose of cheering their spirits, when, in truth, they cannot derive any good from it. I may also ask whether a reasonable man would have the courage to give to a respectable female in any family a genuine venereal disease, on the untenable pretext of exempting the patient from cancer for the rest of her life.

Thus, as has been remarked by a distinguished Belgian practitioner, M. Fallot, at most could such an inoculation be tolerated when its object is to cure a tumour already in existence.

Syphilization then, with the view of curing or preventing cancer, is one of those thousand chimeras which from time to time pass like meteors through the minds of certain individuals.

Although I desire much more than I can hope, to see the day when we shall be in the possession of a specific for cancer, I am not the less distressed at observing physicians who are usually young and full of activity, wasting in this way talents from which society could not fail to profit, had they made a better use of the advantages that nature has given them.

D. In short, we are not yet in possession of anything that acts as a protection against cancer, or that can prevent the reproduction of this terrible disease.

When return does take place, it is far from showing itself at any precise period. Sometimes the wound is scarcely a quarter, a half, or two thirds cicatrized, before new malignant growths present themselves to the notice of the surgeon. At other times, on the contrary, it is only at the end of some months or years after the cicatrization of the wound that the return of the disease begins to show itself. In the first class of cases, the fresh cancer often presents itself in the shape of a patch of grayish, violet-coloured fungus, having a grained appearance, which manifests itself in the midst of the natural projection of the wound.

One, two, three, or a still greater number of these patches occur either successively or together and progress singly, or shortly

become confounded together. After the cure, the fresh growths present themselves behind the cicatrix, towards its angles, or beyond its boundaries. Frequently, also, there are little scattered masses, a sort of seed-bed of small scirrhous or encephaloid tubercles, upon the skin of the part itself, or of the immediate neighbourhood.

If at the time of the operation there were any enlarged glands, either in the axilla or at the root of the neck, they do not usually undergo marked development until after the expiration of some weeks, or even, in some patients, of several months.

As for the return by general infection, it often does not occur for one or two years. Madame B—, whose case has already been quoted, p. 450, did not become subject to the cancerous affection of the liver until nearly three years afterwards. In the instance of Madame S—, in whom the operation at first presented an unhoped for amount of success, p. 510, and whose general health remained so flourishing during a whole year, there happened in the first instance the development of a cancerous gland above the left clavicle, and subsequently, in about three months, the formation of an enormous tumour in the liver, at the same time that all the important functions of the economy were greatly disturbed.

§ 2. CURATIVE MEASURES.—Since science supplies us with no safeguard against the reproduction of the cancer, and since in practice we are ceaselessly searching for a preservative against this cruel malady, the question arises whether at least there be a possibility of again freeing the patients from it by a fresh operation. In the presence of a reproduction it would be childish to reckon upon the efficacy of any remedies, whether local or general, such as have been pointed out in the chapter relative to the treatment of primary cancer, and we thus find ourselves reduced to two forms of remedy, a new operation, and purely palliative treatment.

What has been said in opposition to operation for primary tumours, applies, it must be confessed, with much more force when the question relates to a tumour which has been reproduced. To those who consider cancer as the sign of a constitutional disease, the return of it affords an incontestable proof of the correctness of their doctrine. I shall not here recur to the reasons which induce me to adopt an opposite opinion. I will merely add that

the reproduction of a cancer around, or in the neighbourhood of a cicatrix, by no means affords an irrefragible proof of a general infection. Small cancerous tumours may so easily have escaped the notice of the operator, and have remained hidden amidst the healthy tissues, that the appearance of a new tumour is a natural result, which cannot in any way surprise the surgeon. I have always believed that operation is as justifiable in secondary, as in primary cancers. I require, however, that the tumour or tumours be moveable, likely to be easily extirpated, and that the patients present no symptom of general infection.

By regulating myself in this manner, I have succeeded in radically curing patients after three successive operations, and some others after two.

The following, amongst others, affords a remarkable example.

Encephaloid tumour extirpated three times, and eventually radically cured.—In the year 1841, I was consulted, at the Rue St. George, by Madame V—, a lady of 56 years of age, stout, strong, well-formed, but very nervous; who stated to me that a year previously one of my colleagues in the hospitals of Paris, had removed a tumour from her right breast, and that shortly after the cicatrization of the wound, a second one had made its appearance. The new tumour existed on the lower and external border of the cicatrix. It was as large as a hen's egg, and had a large base; its summit, shaped as a globular projection, or like the top of a penny roll, was of a reddish violet colour, and fluctuating. Venous branchings covered its surface, and lost themselves at the root in the rest of the region. This projection rested on a somewhat thickened base, tolerably firm, like lardaceous scirrhus, which was continuous with the glandular tissue below the cicatrix, and preserved considerable mobility on the surface of the chest. The axilla was free, and there was no swelling in any other situation. The tumour which had been removed in the year previously was preserved. It was formed by a central nucleus of encephaloid appearance, and by a lardaceous mass, which appeared to form a sort of shell for this substance. The whole also seemed to be enveloped in a tolerably thickish layer of sound tissue, so as to make it probable that no altered structures had been left behind. This examination, it is true, filled me with alarm; but Madame V—'s general condition, and the, as yet, circumscribed limits of the disease, left no

room for hesitation. I recommended and performed a fresh operation a week later.

The tumour was removed like a slice of melon, in an ellipse of sound tissue. Abundant suppuration followed, and the cicatrization of the wound was not complete for about six weeks. The morbid structure presented all the characters of encephaloid tissue. It was softened, fungous, medullary, reddish, and vascular in the external projection; lardaceous, homogeneous, and brownish in some parts; and everywhere continuous with a thick layer of mammary tissue, which I had removed along with it.

Eighteen months after this operation, Madame V— applied to me again for a third tumour, which had made its appearance in the right breast. This new growth was situated above and to the outer side of the last cicatrix, in front of the anterior border of the axilla. Somewhat smaller in size than the last tumour, it bore, however, a striking resemblance to it in all other respects. The cicatrices were intact; there was nothing as yet in the axilla; the general health was not more disordered than previously, and there being no sign of cancerous cachexia observable, M. Marc Moreau and I came to the conclusion that a third operation should be performed. This operation, which the patient cheerfully agreed to, and which she supported, like the others, with great courage, was simple, and easily executed. The natural stoutness of the patient, and the suppleness of the healthy parts, allowed the lips of the wound to be brought in contact. Six weeks elapsed before cicatrization was complete, but no serious incident occurred. This time the cure was complete. I have seen Madame V— every year since, and for long past she has ceased to dread the return of the disease in her breast. At the present time, 1853, she continues in good health. It need hardly be added, that the last tumour exactly resembled the others in its anatomical composition and texture, and in the appearances which it presented at the bedside.

M. Roux, indeed, states that he on one occasion succeeded after six returns of the disease.[1]

Even when we cannot obtain a radical cure, it may still be useful in some patients to remove the cancer afresh. I have in this way prolonged the lives of several for a considerable number

[1] 'Bulletin de l'Acad. de Méd.,' vol. ix, pp. 595.

of years. A lady at Brest, operated upon for the first time in 1842, and subsequently a year later, by M. Foulloi, came to Paris in 1845, where I removed from her a fibro-plastic cancer, situated on the cicatrix of the old wound. The patient, having perfectly recovered from this third operation, returned to Brest, but came up again a year later with a fresh tumour, which I again extirpated and easily cured.

In 1852 she submitted to a fifth operation, and her general condition was such as not entirely to destroy all hope of a radical cure.

It is, at any rate, incontestable that this patient would have died six or eight years ago, if a fresh operation had been declined after the first return of the disease.

Madame H— (de Besançon) has just returned home, after an operation submitted to for the fifth time in the space of five years. Her first tumour was encephaloid in nature, like the second and following ones. The wounds had perfectly cicatrized, and the general health had improved, at least for several months after each operation; so that, but for these repeated operations, the patient would certainly have sunk three or four years ago.

Amongst the hospital patients, there is one who has submitted to the operation seven times; twice in the breast, twice in the sub-pectoral groove, and three times in the cavity of the axilla. In this way the patient, who herself urgently demanded the assistance of surgical measures, has renewed her strength, and prolonged her existence for more than six years.

In the present day especially, when we are enabled to prevent pain, the operation should be proposed, or should at least not be denied to patients who may desire it, when they are in the conditions pointed out above. It is not the less true, however, that as regards return, the chances are even less than after operation for a primary cancer, all things being equal, as regards the nature and form of the disease, and as regards the composition, and other individual peculiarities of the patient.

If the return be manifested in the form of vegetations, or fungous growths at the base or on the surface of the wounds, it is preferable to attack them by caustics. In such a case, we should employ either sulphuric acid or zinc paste.

After the fifth operation, Madame H—, of whom I spoke a little before, found her cancer to reappear in the form of a fungus, which rapidly acquired the dimensions of the head. Fearing

to employ the knife again, and nevertheless desiring to relieve the unfortunate patient from this enormous focus of infection, I had recourse to the sulphuric acid. Attacking the tumour in successive portions, in consequence of its vast dimensions, I entirely destroyed it in four operations. It was necessary to penetrate as deep as the bones. The wound cicatrized, somewhat contracting the front of the thorax. This was in the month of March, and Madame H— remains, as far as inconvenience is concerned, with a sort of issue at the base of the cicatrized excavation (December, 1853).

The Vienna paste is too diffluent, and too readily gives rise to bleeding, to be applicable here. Should, on the contrary, the tumour be globular and moveable, it is better, if it be not ulcerated, to perform extirpation with a cutting instrument.

The knife also merits the preference, even where there is ulceration, if the tumour be not flat, and not more extensive than thick.

Madame D—, a lady upon whom I operated for the first time in 1850, with a cutting instrument, and on three occasions since, partly with the cautery, and partly with sulphuric acid, continues living with all the appearances of good health, and with a sort of little issue in the cavity of the axilla.

The operation, moreover, requires the same precautions, the same preparations, and the same management, as in the case of a primary tumour. It may, however, be observed, that it usually gives rise to the less shock, the more frequently the patient is submitted to it. It might almost be said that the system gets accustomed to it, and that, in some sort, it does not produce more effect upon the constitution than some purely local and passing affection.

SCIRRHUS.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1824	Radiated.	53	Labouring woman.	Left breast	—	Contusion.	—	Extirpation.
„	„	48	—	—	2 years.	—	—	„
„	—	35	—	Right breast	15 months.	Blow.	Tumour in the axilla.	„
1826	—	58	—	Left breast	18 „	—	„	„
1831	—	60	—	„	—	—	„	„
1835	—	58	Work-woman.	Right breast	2 years.	Blow.	—	„
„	Lardaceous.	41	Cutler's wife.	Left breast	Some months.	—	—	„
„	—	46	Servant.	Right breast	—	—	Tubercle in the lungs.	Mercury and compression.
„	—	38	„	Left breast	8 months.	Blow.	—	Extirpation.
„	—	24	„	„	„	—	Engorgement of the breast.	„
„	—	37	Laundress.	„	—	—	Ulcerated.	Chloride of zinc paste.
1836	Ligneous.	47	Sempstress.	„	—	Fall.	Tumour in the axilla.	Extirpation.
„	—	72	Servant.	„	15 years.	—	Ulcerated.	„
„	Lardaceous.	40	—	Right breast	2 years.	—	—	„
„	—	60	—	Left breast	6 months.	Blow.	—	„
„	Lardaceous.	58	Lace-worker.	„	5 months.	—	—	„
„	—	44	Day-worker.	Both breasts	8 months.	—	—	„
„	Ligneous.	56	Glove-maker.	Left breast	—	—	—	(left breast). Extirpation.

SCIRRHUS.

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
Diffuse phlegmon.	—	12 days.	Death (diffuse phlegmon).	—	Scirrhous cancer; traces of cancer in the viscera.	—	
—	Some months.	—	Death.	—	No cancer in the viscera.	—	Two pounds in weight.
—	—	—	,,	—	—	—	Fell a victim to the sequelæ of the cancerous affection.
—	32 days.	—	Cured.	—	—	—	No return.
—	—	—	In process of cure.	—	—	—	Size of an egg.
—	75 days.	49 days.	Cured.	—	—	—	
—	35 ,,	—	Incomplete cure.	—	—	2 children.	Size of an egg.
—	20 ,,	—	Same state.	—	—	—	Very much spread superficially.
Phlegmonous erysipelas.	21 ,,	19 days.	Death.	—	Purulent focus and fibrous body in the chest.	—	Size of an egg.
—	77 ,,	73 ,,	In process of cure.	—	Purulence of the lacteal tubes, with indurated scirrhus.	1 child.	
—	2 ,,	—	Same state.	Return.	—	6 children.	Incurable.
—	52 ,,	40 days.	Cure progressing.	—	—	5 ,,	
—	34 ,,	31 ,,	Cured.	—	—	—	
—	17 ,,	14 ,,	Cure progressing.	—	—	—	
Erysipelas.	59 ,,	51 ,,	Incomplete cure.	—	—	8 children.	Size of the fist.
,,	39 ,,	33 ,,	Cured.	—	—	—	,, ,,
,,	40 ,,	36 ,,	,,	—	—	—	
—	10 ,,	—	Cicatrization progressing.	Return.	—	6 children.	Return; caustic applied to no purpose.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1837	Ligneous.	70	—	Left breast	5 years.	—	—	Extipation.
,,	—	28	Chamber-maid.	Right breast	—	—	—	,,
,,	Lardaceous.	50	Cook.	,,	10 months.	Blow.	—	,,
,,	—	61	Servant.	Left breast	—	Repeated blows.	—	—
,,	*En masse* and disseminated.	48	Sempstress.	,,	—	—	—	Extirpation.
,,	—	47	Wife of an agriculturer.	,,	1 year.	Blow.	—	,,
,,	—	72	Sick-nurse.	,,	—	—	—	,,
,,	Ramous.	44	Sempstress	,,	16 years.	—	—	,,
,,	—	47	Housewife.	,,	—	Repeated blows.	—	—
,,	Ramous and general.	—	Cook.	Right breast	—	—	Tuberculous scirrhus; disseminated axillary engorgement.	Extirpation.
,,	—	39	—	Left breast	22 years.	—	Phthisis.	,,
,,	—	48	Sempstress.	,,	—	—	—	,,
1838	*En masse.*	36	—	,,	—	Blow.	—	Friction with iodide of lead.
,,	—	37	Laundress.	,,	—	—	—	Chloride of zinc paste.
,,	In layers.	48	Vine-dresser	,,	—	—	—	—
,,	—	40	Servant.	Right breast	4 years.	—	Ulcerated.	—
,,	*En masse.*	53	Day-worker.	,,	—	—	Axillary engorgement.	—
,,	—	61	Laundress.	,,	—	Blow.	—	Zinc paste.
1839	Lardaceous.	40	Sempstress.	,,	1 year.	—	—	Extirpation.
,,	In plates.	47	Cook.	Left breast	9 months.	—	Ulcerated.	—
,,	—	36	Tailoress.	,,	1 year.	—	,,	—
,,	Ligneous.	54	Vine-dresser	Right breast	—	—	Axillary engorgement.	—
,,	Ligneous *en masse.*	30	Sempstress.	Left breast	—	—	—	—
1840	—	50	Wife of a workman.	Right breast	4 months.	Blow.	Tumour in the axilla.	Extirpation.
,,	—	48	—	Left breast	—	—	Ulcerated.	—
1841	Male.	46	—	Right breast	Some months.	—	—	Extirpation.
,,	—	47	Farmer's wife.	—	—	—	—	,,
,,	—	38	—	Right breast	—	—	Ulcerated.	,,

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
—	—	2½ months	Cured.	—	Scirrhous carcinoma.	—	Died 7 years after without return.
Colic.	48 days.	45 days.	„	Return.	—	—	
—	21 „	14 „	Cure progressing.	—	Lardaceous tissue.	—	
Hemorrhage.	2 months.	50 „	Cured.	—	—	—	Size of a hen's egg.
Dynamic symptoms.	—	—	Death.	—	—	—	
Erysipelas; abscess.	57 days.	49 days.	Cured.	—	—	—	
—	5 „	—	Same condition.	—	—	—	Incurable.
—	6 months.	100 days.	Cicatrization.	Return.	—	1 child.	Return in the right breast.
Erysipelas.	45 days.	40 „	Cured.	—	—	1 „	Size of the fist.
—	74 „	66 „	„	—	—	1 „	
—	26 „	16 „	Death.	—	Softened tubercle in the lungs and mesentery.	—	Reddish discharge from the nipple.
—	1 day.	—	Same state.	—	—	—	Incurable.
—	4 days.	—	„	—	—	1 child.	No operation.
—	1 month.	—	„	—	—	—	Incurable.
—	3 days.	—	„	—	—	—	Unfit for operation.
—	—	—	„	—	—	1 child.	„ „
—	3 days.	—	Same state.	—	—	—	„ „
Erysipelas.	—	32 days.	Death.	—	—	—	
—	30 days.	24 „	Cured.	—	—	Several children.	
—	1 month.	—	Same state.	—	—	—	Incurable.
—	4 days.	—	„	—	—	—	„
—	5 „	—	„	—	—	—	„
—	75 days.	—	Cured.	—	—	—	
Erysipelas; abscess.	7 weeks.	—	„	—	—	—	Size of an egg.
—	3 days.	—	Same state.	—	—	—	Incurable.
—	6 weeks.	—	Cured.	—	Scirrhous carcinoma.	Many children.	Size of an egg; no return.
—	22 days.	—	Cure progressing.	—	—	—	
—	—	—	—	—	—	—	Case incomplete.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1841	*En masse.*	47	Dealer.	Left breast	—	—	Axillary engorgement.	—
,,	,,	52	Cook.	Right breast	—	—	Axillary tumour.	—
,,	Ligneous.	32	Servant.	Left breast	—	—	—	Iodide of lead.
,,	—	43	—	Right breast	—	—	Axillary tumour.	—
,,	—	48	Needle-worker.	—	—	—	Infiltration of the arm.	—
1842	—	45	Colourist.	Left breast	9 months.	Blow.	Extending to the axilla.	Extirpation.
,,	—	40	—	,, ,,	—	—	Axillary engorgement.	,,
,,	Ramous.	58	Fruiteress.	Right breast	8 months.	—	Spreading considerably.	,,
,,	—	64	Mattress-maker.	Left breast	—	—	—	—
1843	—	38	Needle-worker.	—	16 months.	—	—	Extirpation.
,,	—	65	—	Right breast	—	—	Gangrene.	Black caustic.
,,	Ligneous.	52	—	Left breast	9 months.	—	—	Extirpation.
,,	Ramous.	42	Dealer.	,, ,,	9 ,,	—	—	,,
,,	—	72	—	Right breast	—	—	Ulcerated.	Sulphuric caustic.
,,	Ramous.	44	Day-worker.	,, ,,	10 months.	—	—	Extirpation.
,,	—	53	—	,, ,,	5 years.	—	Ulcerated.	Caustics.
1844	—	48	—	,, ,,	12 months.	—	—	Medullary resolution; leeches; iodide of lead; hemlock plaster, &c.
,,	*En masse;* ligneous.	72	—	Left breast	9 ,,	Mother died of cancer of the breast; after a blow.	—	Iodide of lead.
,,	Ligneous.	41	Wife of a husbandman	,, ,,	18 years.	—	—	—
,,	,,	56	,,	,, ,,	10 ,,	Blow and fall.	Tuberculous scirrhus.	Iodide of lead.
,,	*En masse.*	62	—	Right breast	—	—	Ulcerated axillary engorgement.	Extirpation.
,,	Scirrhus; encephaloid.	40	Vine-dresser.	Left breast	1 year.	—	Disseminated tumour.	—
,,	Ligneous.	35	—	Right breast	2 years.	—	Tumour in the axilla.	Extirpation.
,,	,,	62	Servant.	,, ,,	1 year.	Blow.	,,	,,

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
—	7 days.	—	Same state.	—	—	—	Incurable.
—	11 „	—	„	—	—	—	„
—	11 „	—	„	Return.	—	—	„
—	1 day.	—	„	—	—	—	„
—	1 „	—	„	—	—	—	„
—	39 days.	35 days.	Cured.	—	—	—	Size of half the fist.
—	36 „	30 „	—	—	—	—	Case incomplete.
—	34 „	29 „	Cured.	—	Encephaloid and scirrhus.	—	
—	3 „	—	Same state.	—	—	—	Mental alienation. No operation.
Erysipelas; abscess.	19 „	16 days.	Cured.	—	—	—	Size of a walnut.
—	30 „	29 „	Cure progressing.	—	—	—	
—	45 „	40 „	„	—	—	—	Size of a small apple.
Erysipelas.	—	—	—	—	—	—	Case not finished.
—	38 days.	28 days.	Cure progressing.	Return.	—	—	Return after the fall of the eschar.
Erysipelas; pleurisy; pericarditis.	18 „	9 „	Death.	—	—	—	
—	—	—	Same state.	—	—	—	
—	8 months.	—	Cured.	—	—	—	No return.
—	14 days.	—	Same state.	—	—	—	Occupying all the breast.
—	1 day.	—	„	—	—	4 children.	Reddishdischarge from the nipple. Unfit for operation.
—	9 days.	—	,	—	—	—	Unfit for operation.
Intense erysipelas.	29 „	21 days.	Death (erysipelas).	—	—	—	Occupying all the breast.
—	5 „	—	Same state.	—	—	4 children.	Unfit for operation.
—	22 „	—	Cure progressing.	—	—	3 „	
Erysipelas; pleurisy.	—	22 days.	Death (pleurisy.)	—	—	—	

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1844	Scirrhus; encephaloid.	45	—	—	—	—	—	—
1845	*En masse;* ligneous.	55	Day-worker	Left breast	5 months.	—	Tumour in the axilla.	Extirpation.
„	—	59	„	Right breast	—	—	—	—
„	—	40	Needle-woman.	„ „	1 year.	—	Axillary glands.	Extirpation.
„	2 scirrhous tumours.	—	Employed at a tobacco factory.	„ „	—	—	Tumour in the axilla.	—
„	Ligneous.	40	—	Left breast	3 years.	—	Ulcerated; phthisis.	—
„	„	48	—	Both breasts	—	—	Axillary obstructed glands; tumefaction of the arm.	—
„	—	52	—	Right breast	3 years.	Blow.	Axillary obstructed glands	—
„	Ligneous.	51	Cook.	„ „	5 „	„	—	Safrano-sulphuric caustic
1846	Ramous.	50	Servant.	Left breast	3 „	—	Ramification towards the axillary plexus, the sternum, and hypochondrium; ulcerated.	Extirpation
„	—	52	Country lady.	„ „	3 months.	Mother died of a cancer of the breast; sister died of cancer of the uterus; blow.	—	„
„	Lardaceous.	52	—	Right breast	2 years.	—	—	„
„	—	59	Day-worker	„ „	18 months.	—	Ulcerated enlarged glands.	„
„	Ligneous.	50	—	—	10 years.	—	Ulcerated.	„
„	In plates.	40	Milkwoman.	—	—	—	—	„
„	*En masse.*	42	Servant.	Right breast	Some years.	—	Tumour in the axilla.	—
„	—	38	—	„ „	—	—	—	Extirpation
„	—	78	—	—	Some months.	—	—	Sulphuric caustic.
„	*En masse.*	46	—	Left breast	3 years.	—	Tuberculous scirrhus; ganglionic enlargement.	„

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
—	—	—	Same state.	Previously returned.	—	—	Return before entering hosp. Unfit for operation.
Hospital gangrene.	87 days.	75 days.	Cure	—	—	—	
—	23 „	—	—	Prev. ret.	—	—	Unfit for operation.
—	26 „	19 days.	Cure	—	—	4 children.	
—	16 „	—	Same state.	—	—	—	No operation.
—	6 „	—	„	—	—	—	„
—	1 day.	—	„	—	—	—	„
—	7 days.	—	„	—	—	—	„
—	3 months.	—	Cure progressing.	—	—	—	
Erysipelas; purulent infection.	15 days.	11 days.	Death (purulent infection).	—	Purulent effusion in the chest.	—	
Erysipelas; pneumonia; phrenitis.	16 „	9 „	Death (pneumonia).	—	Pneumonia; phrenitis.	—	
—	25 „	21 „	Cure progressing.	Prev. ret.	—	—	Operated on for cancer of the right and left breast two years ago.
—	32 „	29 „	Cured.	„	—	—	Operated on two years ago.
Erysipelas.	7 „	5 „	Death (erysipelas).	—	—	—	
—	10 „	—	Same state.	—	—	—	No operation.
—	7 „	—	„	—	—	—	„
—	2 months.	—	Cured.	—	—	—	
—	19 days.	7 days.	Cure progressing.	Prev. ret.	—	—	
—	8 „	—	Same state.	—	—	—	No operation.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1846	Radiated.	43	Housc-keeper.	Left breast	3 years.	Blow.	Ulcerated; ganglionic enlargement.	Extirpation.
1847	—	—	—	,, ,,	5 ,,	,,	—	,,
,,	—	58	—	Right breast	Some months.	—	Tubercular scirrhus.	,,
,,	Lardaceous.	55	—	Left breast	4 years.	—	—	,,
,,	—	60	Dealer.	—	—	—	—	,,
,,	Ulcerated scirrhus.	35	—	—	10 months.	—	—	White precipitate, then sulphuric caustic.
,,	—	52	—	Left breast	—	—	—	Extirpation.
,,	—	52	—	,, ,,	—	—	Enlarged axillary glands.	,,
1848	—	61	Spinster.	,, ,,	—	—	—	,,
,,	In plates.	41	Needle-woman.	,, ,,	8 years.	Blow.	Tumour in the axilla.	,,
,,	2 scirrhous tumours.	44	—	,, ,,	3½ ,,	—	—	,,
,,	Lardaceous.	48	Trowsers-maker.	,, ,,	5 months.	—	Tumour in the axilla.	,,
,,	—	45	,,	,, ,,	3 ,,	—	Axillary engorgement.	—
,,	—	49	Laundress.	,, ,,	—	—	,,	Extirpation.
,,	—	48	House-keeper.	—	—	Blow.	—	,,
,,	—	37	Innkeeper.	Left breast	18 months.	—	—	,,
,,	*En masse.*	52	—	,, ,,	Some years.	Violent blow	Tubercular cancer of skin.	—
,,	Ligneous.	51	House-keeper.	Right breast	3 years.	—	—	Extirpation.
,,	—	49	Sempstress.	Left breast	—	—	—	,,
,,	—	48	Trowsers-maker.	,, ,,	—	—	—	,,
,,	—	50	Sempstress.	Right breast	Some years.	—	Axillary glands enlarged.	,,
,,	—	48	Trowsers-maker.	Left breast	—	—	—	,,
,,	—	54	Servant.	,, ,,	—	—	Axillary enlargement.	,,
1849	—	49	Sempstress.	,, ,,	—	—	Axillary tumour.	,,
1850	—	42	,,	,, ,,	6 months.	—	Axillary obstruction.	,,
,,	—	36	Servant.	Right breast	2 years.	—	Scirrhous tumour in the axilla.	,,
,,	Ligneous.	46	Dealer.	,, ,,	—	Blow.	Swellings in the axilla.	,,

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
—	79 days	74 days.	Cured.	—	—	—	
—	—	6 weeks.	„	—	Cancer-cells.	—	Size of an egg.
—	50 days.	—	„	—	—	—	
—	32 „	26 days.	„	—	—	—	Size of half a hen's egg.
—	10 „	4 „	Death.	—	Cancerous; hypertrophic (Lebert).	—	
—	17 „	—	Cure progressing.	Prev. ret.	—	—	Operated on one year ago.
—	—	—	—	—	—	—	Case incomplete.
Pleuro-neumonia; eritonitis.	16 days.	—	Death	—	—	—	
Erysipelas.	61 „	50 days	Cured.	—	Cancer-cells.	—	
„	24 „	8 „	Death (erysipelas).	—	„	—	
—	31 „	26 „	Cure progressing.	Return.	—	—	
—	12 „	6 „	„	3d return.	Cancer-cells.	—	Size of an egg.
—	3 „	—	Same state.	—	—	—	
—	1 month.	—	Cured.	—	—	—	
—	33 days.	29 days.	„	—	—	—	
Erysipelas.	47 „	43 „	Cure progressing.	—	—	—	No operation.
—	10 „	—	Same state.	—	—	11 children.	„
—	37 „	32 days.	Apparently cured.	2d return.	Cancer-cells.	2 children.	
—	73 „	69 „	„	3d return.	„	—	
—	70 „	61 „	Cicatrization.	2d return.	„	3 children.	
—	70 „	36 „	Cured.	—	—	—	
—	1 month.	—	„	—	—	—	
Erysipelas.	—	4 days.	Death (erysipelas).	—	—	—	
Erysipelas; cholera.	129 days.	108 „	Cicatrization.	3d return.	—	—	Appearance of a fresh tumour.
Erysipelas; abscess.	55 „	43 „	Cure progressing.	—	—	—	
Erysipelas; purulent infection.	25 „	13 „	Death (purulent infection).	—	—	Pregnant.	
—	40 „	34 „	Cured.	—	Cancer-cells.	6 children.	Size of a pigeon's egg.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1850	Lardaceous.	58	Needle-woman.	Right breast	6 years.	—	Tumour in the axilla.	Extirpation.
,,	—	34	Day-worker.	,, ,,	4 ,,	—	Abscess.	,,
,,	—	45	Dealer.	Left breast	3 months.	Blow.	—	—
,,	—	44	—	,, ,,	—	—	—	Extirpation.
1851	—	48	Needle-woman.	,, ,,	—	Blow.	—	,,
,,	Ligneous.	68	Day-worker.	Right breast	4 years.	,,	Ulcerated.	,,
,,	*En masse.*	33	Sempstress.	Left breast	16 ,,	—	—	Iodide of lead
,,	—	51	Needle-woman.	,, ,,	—	Violent blow	—	Extirpation.
,,	Ligneous.	53	Day-worker	,, ,,	—	—	Axillary engorgement.	,,
,,	Ligneous and disseminated.	48	,,	Both breasts	2 years.	—	,,	—
,,	—	35	Servant.	Right breast	—	Blow.	—	Extirpation
,,	—	48	Mistress of a boarding house.	Left breast	6 months.	—	Cyst.	,,
,,	Ligneous.	53	Needle-woman.	Right breast	—	Blow.	Axillary tumour.	—
,,	—	53	Day-worker.	,, ,,	—	,,	,,	Extirpation
,,	—	56	Servant.	Left breast	—	,,	,,	,,
1852	—	42	,,	,, ,,	1 year.	—	—	,,
,,	In plates.	50	House-keeper.	Both breasts	4 years.	—	Axillary engorgement.	—
,,	—	46	Day-worker.	Right breast	7 ,,	—	,,	Extirpation
,,	Ligneous.	35	—	,, ,,	2 ,,	Blow.	,,	—
,,	—	56	Dealer.	Left breast	15 ,,	,,	—	—
,,	Ligneous.	64	Day-worker.	,, ,,	1 year.	—	—	Extirpation
,,	Lardaceous.	51	Servant.	,, ,,	5 months.	—	—	,,
,,	—	48	,,	,, ,,	1 year.	—	—	,,
,,	Ligneous.	44	—	Right breast	2 years.	—	Axillary tumour.	,,
,,	Lardaceous.	47	—	Left breast	16 ,,	Blows.	—	,,

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
Erysipelas.	33 days.	28 days.	Cured.	—	Cancer-cells.	6 Children.	Considerable transparent discharge from the nipple.
Erysipelas; abscess.	48 „	43 „	„	—	—	Several children.	Bloody purulent discharge from the nipple.
—	34 „	—	Same state.	—	—	—	No operation.
—	30 „	—	Cured.	3d return.	—	—	
Hospital gangrene.	22 „	20 days.	Cure progressing.	—	Cancer-cells.	—	
Erysipelas.	20 „	—	Death (erysipelas).	—	„	5 children.	Size of an apple.
—	15 „	—	Same state.	—	—	—	No operation. Occupies all the breast.
Erysipelas; hospital gangrene.	57 „	49 days.	Cicatrization.	Prev. ret.	—	3 children.	Pleuro-pneumonia.
Hospital gangrene.	68 „	61 „	Cure progressing.	—	—	—	Size of an orange.
—	4 „	—	Same state.	—	—	—	No operation.
Two attacks of erysipelas.	47 „	49 days.	Cure progressing.	—	—	—	Size of an egg.
—	43 „	11 „	Cured.	—	Cancer-cells; hypertrophy.	—	
—	4 „	—	Same state.	—	—	2 children.	No treatment.
Hospital gangrene.	42 „	29 days.	Cure progressing.	—	—	4 children.	
Erysipelas; two attacks of hospital gangrene.	3 months.	84 „	Cured.	—	—	—	
—	35 days.	29 „	„	—	—	—	
—	5 „	—	Same state.	—	—	Several children.	No treatment.
Erysipelas; abscess.	2 months.	55 days.	Cured.	—	—	2 children.	
—	10 days.	—	Same state.	—	—	—	No treatment.
—	13 „	—	„	—	—	—	„
Slight erysipelas.	23 „	17 days.	Cured.	—	Scirrhous carcinoma; cancer cells.	2 children.	
Erysipelas.	36 „	30 „	Death.	—	„	4 children.	
—	35 „	29 „	Cured.	—	—	—	
—	51 „	45 „	„	—	Scirrhous carcinoma; cancer-cells.	14 children.	
Erysipelas.	76 „	66 „	„	—	„	6 children.	With sero-sanguineous cyst.

Year.	Species.	Age.	Occupation.	Situation.	Duration.	Cause.	Complications before Treatment.	Treatment.
1852	Lardaceous	30	Rag-picker.	Left breast	3 months.	Blows.	Axillary engorgement.	—
,,	,,	42	House-keeper.	,, ,,	—	—	—	Extirpation.
,,	Ligneous.	58	Day-worker.	,, ,,	—	—	—	,,
,,	,,	61	,,	,, ,,	1 year.	—	—	,,
,,	Ramous.	63	—	Right breast	18 months.	Blow.	Axillary engorgement.	,,
,,	In plates.	36	Sempstress.	Both breasts	18 ,,	—	,,	—

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Remarks.
	Altogether.	After Treatment.					
—	25 days.	—	Same state.	—	—	—	Size of a hen's egg; no treatment.
—	29 „	25 days.	Cured.	—	—	—	
Erysipelas.	1 month.	24 „	„	—	Scirrhous carcinoma; cancer-cells.	—	
—	57 days.	47 „	Cure progressing.	—	„	—	
—	69 „	54 „	Cured.	—	—	—	
—	21 „	—	Disease aggravated.	—	Scirrhous carcinoma; cancer-cells.	—	

ENCEPHALOID.

Year.		Age.	Occupation.	Seat.	Duration.	Cause.	Complications before Treatment.	Treatment.
1834	M.	40	Butcher's wife.	Right breast	—	—	Ulcerated.	Extirpation.
1836		43	Day-worker.	Left breast.	—	Blow.	„	„
1837		45	—	„	9 months.	—	—	„
„	M.	52	—	Right breast	—	—	—	—
„		48	Cook.	—	18 months.	—	Ulcerated.	—
„		39	Pasteboard-maker.	Right breast	—	—	Axillary tumour.	—
„		40	—	„	17 months.	Blow.	Ulcerated.	Friction with hydrated iodide of potassium.
1838		51	Day-worker.	Left breast.	5 „	—	Ulcerated; axillary tumour.	Extirpation.
„		59	Box-maker.	Right breast	—	—	Axillary engorgement.	„
„		76	—	Left breast.	2 years.	—	—	„
„		40	Day-worker.	„	—	—	—	—
„		39	„	Right breast	4 months.	—	Axillary tumour.	—
„		47	—	„	4 „	—	—	—
1839		50	Servant.	„	—	—	Axillary engorgement.	Extirpation.
„		62	—	—	—	—	Cancer of the liver.	—
„		—	Vine-dresser.	Left breast.	4 years.	—	Axillary engorgement.	Extirpation.

ENCEPHALOID.

Complications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Observations.
	Altogether.	After Treatment.					
—	—	2 months.	Cured.	—	Encephaloid cancer.	Several children.	No return (1852)
Mortification of the cellular tissue; symptoms of pleurisy.	35 days.	—	Not cured.	—	—	—	Very large wound
—	39 days.	34 days.	Cicatrization.	Previously returned	—	—	Size larger than the head of a new-born child.
—	—	—	—	—	—	—	Operated on three times, and at last radically cured.
—	1 day.	—	Same state.	—	—	—	Occupying all the breast.
—	43 days.	—	„	Prev. ret.	—	—	Operated on a year before; incurable.
—	4 „	—	„	—	—	—	Hemiplegia; incurable.
Purulent infection.	40 „	35 days.	Death.	—	—	10 children.	
Erysipelas.	31 „	21 „	„	—	—	—	
—	—	15 „	Cured.	—	—	—	
—	1 day.	—	Same state.	Prev. ret.	—	—	Operated on eighteen months previously; incurable.
—	3 days.	—	„	„	—	—	Operated on five months before; incurable.
—	2 „	—	„	„	—	—	„
Erysipelas.	21 „	12 days.	Death.	„	—	—	Operated on four years before.
—	—	—	„	—	—	—	
—	41 „	37 days.	Cure progressing.	—	—	—	

Year.		Age.	Occupation.	Seat.	Duration.	Cause.	Complications before Treatment.	Treatment.
1840		58	Groceress.	Left breast.	1 year.	Blow.	—	Extirpation.
1841		21	Lace-woman.	Right breast	6 months.	,,	Tumour in the axilla.	,,
,,		34	Sempstress.	Left breast.	—	—	Ulcerated.	,,
,,		39	Day-worker.	,,	—	—	—	,,
,,		53	Servant.	,,	1 year.	—	Ulcerated; axillary obstruction.	—
1842		38	—	Right breast	4 years.	—	Hemorrhagic ulcer.	Extirpation.
,,		54	Work-woman.	,,	8 months.	—	—	,,
1844		46	Sempstress.	,,	5 years.	—	Ulcerated.	,,
,,		50	—	Left breast.	2 ,,	—	—	,,
,,		38	Carver's wife.	Right breast	—	—	Encephaloid of the abdominal wall.	—
1845		59	Laundress.	,,	3 years.	—	Ulcerated; disseminated plates.	Zinc paste.
1846		56	Day-worker.	Left breast.	5 months.	Blow.	Ulcerated; axillary engorgement	Palliative treatment.
,,		66	Florist.	,,	1 year.	,,	—	Extirpation.
,,		27	Cook.	Right breast	,,	—	Axillary obstruction.	,,
,,		49	,,	Left breast.	—	—	—	,,
1847	M	55	—	Right breast	2 years.	—	—	,,
1848		47	Teacher of languages.	,,	—	—	—	,,
,,		79	—	Left breast.	—	—	—	,,
,,		68	Sempstress.	Right breast	—	—	—	—
,,		47	Housekeeper.	,,	2 years.	—	—	Extirpation.
1849		58	—	Left breast	—	—	—	,,
,,		40	Cook.	Right breast	—	—	Axillary tumour.	,,
,,		46	—	,,	—	—	Ulcerated.	,,
,,		49	—	Left breast	—	—	—	,,

Complications after Treatment.	Duration. Altogether.	Duration. After Treatment.	Termination.	Return.	Pathological Anatomy.	Number of Children.	Observations.
—	23 days.	—	Cure progressing.	Prev. ret.	—	—	Operated on one year before.
Erysipelas.	5 months.	71 days.	Cured.	—	—	—	
—	51 days.	33 „	„	Prev. ret.	—	—	Operated on eight months before.
Erysipelas.	30 „	24 „	„	„	—	—	Previously operated on.
—	5 „	—	Same state.	—	—	4 children.	Unfit for operation.
—	41 „	35 days.	Cure progressing.	—	—	—	Size of two fists.
—	55 „	51 „	„	—	—	15 children.	
—	54 „	42 „	Cured.	—	—	—	Size of an egg.
—	26 „	23 „	„	Twice returned previously.	—	—	Size of the fist.
—	50 „	—	Death.	—	—	—	Operated on for two tumours, one in the right breast, the other in the left, three years and two years before.
Pneumonia; pleurisy.	79 „	—	Death (cure progressing).	—	—	—	
—	8 „	—	Same state.	—	—	—	No operation.
—	24 „	19 days.	Cured.	—	—	—	
—	53 „	—	„	—	—	—	
—	18 „	—	„	Prev. ret.	—	—	Operated on seven years before.
—	75 „	—	„	—	Encephaloid lardaceous carcinoma.	—	No return (1852)
Abscess.	41 „	39 days.	Cicatrization.	Prev. ret.	Cancer-cells.	Several children.	
Four returns	95 „	—	Not cured.	„	—	1 child.	Four returns; extirpation and cauterization with safrano-sulphuric acid; not cured.
—	14 „	—	Same state.	—	—	—	No operation.
—	40 „	38 days.	Cicatrization.	—	—	—	Fear of return.
Cholera.	38 „	35 „	Cured.	—	—	—	
Erysipelas.	130 „	112 „	Cicatrization.	Prev. ret.	—	—	
Cholera.	45 „	39 „	Cure progressing.	—	Cancer-cells.	—	Size of a child's head.
Purulent infection.	49 „	40 „	Death.	—	—	Several children.	

Year.		Age.	Occupation.	Seat.	Duration.	Cause.	Complications before Treatment.	Treatment.
1850	M.	62	—	Left breast	Several years.	—	Ulcerated.	Extirpation.
„	M.	58	—	„	—	—	Hemorrhage.	„
„		49	Cook.	„	—	—	Ulceration; axillary and subclavicular engorgement.	„
„		46	„	Right breast	10 years.	Blow.	Axillary obstruction.	„
1851		49	Wine-merchant.	„	3 „	—	Ulceration and softening.	„
„		67	Housekeeper.	„	2 „	—	—	„
„		48	Day-worker.	—	—	—	—	—
„		65	—	Right breast	9 years.	Blow.	Axillary tumour.	Extirpation.
„		55	Innkeeper.	„	—	—	—	—
„		49	—	„	—	—	Ulceration and softening.	Extirpation.
„		51	Laundress.	Left breast	—	—	Axillary tumour.	„
„		53	Innkeeper.	„	—	—	Ulcerated.	„
1852	Lardaceous encephaloid	51	Waistcoat-maker.	Right breast	8 months.	—	—	„
„		25	Sempstress.	„	18 „	—	—	„

[At the end of these tables, there is a *resumé* of certain facts connected with them; as, for instance, fatal cases, and so on. Owing apparently to errors in the enumeration, it is impossible to reconcile omitted. The author, however, states, that he can guarantee that no case of innocent tumour has cused drawing the attention of any one to it, who may be desirous of culling statistical information on that of the disease. A tumour is sometimes put down in statistics as occurring, for example, at the in fact, it may have commenced to grow months or even years before.—Ed.]

omplications after Treatment.	Duration.		Termination.	Return.	Pathological Anatomy.	Number of Children.	Observations.
	Altogether.	After Treatment.					
Erysipelas.	—	2 months.	Cured.	—	Cancer-cells.	—	No return.
—	—	10 weeks.	Cured.	—	„	—	
—	34 days.	32 days.	Cicatrization.	Return.	—	—	
Erysipelas; abscess.	48 „	43 „	Cured.	—	—	—	
Hospital gangrene.	2 months.	49 „	Apparent cure.	Return, (afterwards), return, previously.	—	—	The subsequent return attacked by safrano-sulphuric caustic; cure in about 20 days.
—	39 days.	37 „	Cure progressing.	—	—	—	Flow of blood from the nipple.
—	—	—	—	—	—	—	
Purulent infection.	8 days.	—	Death.	—	Cancer-cells.	—	Size of a child's fist.
—	14 „	—	—	—	—	10 children.	
—	36 „	—	Cure progressing.	—	Cancer-cells.	—	
Hospital gangrene.	63 „	40 days.	„	—	—	—	
Hospital gangrene; erysipelas.	16 „	12 „	Death.	—	Cancer-cells.	Several children.	
—	60 „	55 „	Apparent cure.	Return, (afterwards).	No cancer-cells under the microscope; encephaloid cancer.	—	Indications of return.
rysipelas; cerebral symptoms.	39 „	30 „	Death.	Previously return.	—	—	

e number of cases occurring in each year, the duration of the disease, the causes of death in the is *resumé* with the cases from which it professes to have been derived, and it has therefore been en enumerated as a cancer. There is one fallacy which is so often fallen into, that I may be ex- ese subjects for himself, and that is, not to mistake the date at which the patient was first seen, for e of thirty-seven, because that is the period when the patient first came under observation, whereas,

PART II.

DISEASES OF THE BREAST IN THE MALE.

As the male breast remains through life in a rudimentary condition, it is rarely attacked with serious disease. M. J. Cloquet quotes a case of one of the superintendents of the Hospital St. Louis, who had a breast almost as large as that of a woman.[1] M. Renaudin has published the history of a boy who was in a similar condition.[2] At Pavia there was a man whose breasts were eighteen inches long, and so heavy that he was obliged to have them removed.[3]

For my own part, also, in like manner as M. H. Larrey,[4] I have seen several men whose mammæ were very voluminous.

It would seem that the thing was common enough amongst the Greeks, for Paulus Ægineta speaks of it, and says, that they remedied this condition by a cutting operation. Amongst us, however, these are only exceptional cases; and in such instances, the male breast is composed of fat much more than of the mammary gland itself.

It is nevertheless true, that the principal diseases which have been spoken of as occurring in the female breast, may also become developed in the male.

SECTION I.

DISEASES OF INNOCENT NATURE.

Inflammatory affections, abscess, indurations, cysts, and tumours, in the male, present certain differences, which the surgeon should be aware of.

[1] 'Nouvelle Bibliothèque Médicale,' 1828, vol. i, p. 420.
[2] 'Société Médicale d'Emulation,' vol. i, p. 397.
[3] Pétrequin, 'Anatomie Médicale,' p. 231; Vidal, vol. iii, p. 810.
[4] Robelin, 'Thèse,' 1852 p. 32.

CHAPTER I.

INFLAMMATION AND ABSCESS.

Although the inflammatory affections commence between the gland and the integuments, between the gland and the chest, or in the substance of the mamma itself, it is somewhat rare that they do not all recognise as their exciting cause some external violence. A municipal guard, who during the days of June, 1834, received a blow from a ball on the breast-plate of his uniform, was in this way violently contused, and shortly afterwards a deep-seated abscess formed in the breast. In another patient, the inflammation had been produced by repeated friction of the chest against hard substances. In another instance, inflammation resulted from a blow from a rough stone on the nipple.

The male breast sometimes inflames without appreciable external cause, especially in youth, and in particular before puberty. I have noticed, moreover, that there is a strong resemblance between the diseases of the breast in young boys and in young girls. At that period of life, I have hardly seen any other affection of the breast than inflammation of the areola, submammary inflammation, or adenitis; but in one instance I met with a genuine subcutaneous abscess.

The mammary tissue in the male is so dense, and the gland has so little substance, that inflammatory affections, if they become purulent, can scarcely give rise to a collection, except between the gland and the surface of the chest, or in the subcutaneous structures. Idiopathic abscesses in the male never attain a great size. They progress and become developed slowly, their diagnosis is usually easy, and they by no means expose the patients to the unfortunate results of certain abscesses in women. There is no lactation to irritate, or to prevent the cleansing and cicatrization of the wound. They thus progress like ordinary simple phlegmon, and do not require any other treatment.

If the surgeon be consulted early, he may almost always suc-

eeed in bringing about resolution. For this purpose, leeehes should immediately be applied around the swollen parts, or, perhaps, to the seat of the inflammation itself. Poultices and mercurial ointment assist the local extraction of blood, and then a large blister over all the diseased part will often extinguish the inflammation. If, in spite of this treatment, or because assistance has been sought too late, an abscess should supervene, there ean be no neecssity, as in certain instances, in the female, to prefer spontaneous to artificial opening. In fact, even should the abscess be situated in the parenehyma of the gland, the proper course is to make an opening so soon as fluctuation becomes evident. When once properly opened, in the male, abscesses neither tend to multiply, nor, as in the case of the female, to continue fistulous for whole months together; if there be not some special complieation, they soon get radically well.

Moreover, acute and chronic symptomatie abscesses are at least as common in the male mammary region as in the female. A young man who came into the hospital for an abscess in the right axilla, had his breast at the same time raised up by a large eolleetion of pus. Another patient, forty-seven years of age, presented in the left mammary region a bossilated, red, almost indolent tumour, of encephaloid appearanec, as large as the head, but whieh was, nevertheless, only a vast depôt filled with pus and elots of blood, originating in caries of the sternum. The following is a short aecount of a still more remarkable ease.

Tumour of the breast, tense, fluctuating, painful on firm pressure, without change in the colour of the skin; tumour in the neck, beneath the fascia, fluctuating, less resisting, and more painful than the first. Incision into the tumour of the neck, escape of serous grumous pus, blister to the tumour of the breast, which spread more and more. Paralysis of movement in the inferior extremities, bladder, rectum, and superior extremities, but without loss of sensibility; formation of an abscess in the loins. Sloughs upon the sacrum. Emaciation; marasmus; death. Nothing particular in the brain; no tubercles in the lungs; viscera sound; the veins of the inferior extremities filled with old clots; caries of the sixth and seventh cervical vertebræ, and of the last two ribs; thickening and softening of the periosteum, of the second and third ribs of the left side; the spinal marrow compressed in front as high as the fifth, sixth, and seventh cervical vertebræ, and

the first and second dorsal, with tuberculous matter and hardened pus.—Maximilian Gérard, cabinet maker, æt. 19, for about five weeks had perceived a slight swelling in the left mammary region. This swelling, which was but slightly painful to the touch, rapidly increased, and in the course of a fortnight had attained its present dimensions. About the same time, pain began to be felt on the left side of the neck, towards the lower part, where another tumour had made its appearance for a considerable length of time. It was for these tumours that the patient came into the Hospital of La Charité. The young man, who was below the middle height, thin, and of slight muscular power, had never expectorated blood, nor bled from the nose, neither had he often taken cold, and his parents had usually enjoyed good health. His health was ordinarily good, and he complained merely of some pain in the chest, neck, and shoulders.

The mammary tumour was tense, fluctuating, and painful when pressure was made upon it so as to reach the ribs. There was no change in the colour of the skin, and it seemed to be situated beneath the pectoralis major, the attachments of which limited it below. It was regularly rounded, and projected about $0^{m.} \cdot 02$ to $0^{m.} \cdot 03$, having a diameter of $0^{m.} \cdot 10$.

The tumour in the neck, in the inferior part of the left subclavicular triangle, was beneath the fascia, fluctuating, less resisting and more painful than the tumour of the breast. It projected but little, and hardly exceeded half a nut in size. There was no pain, and the patient had a good appetite and rested well.

Auscultation discovered nothing, except some feebleness in the respiratory murmur at the summit of the right lung.

Feb. 9th, 1845.—Some days after the entry of the patient into the hospital, a bistoury was introduced into the tumour of the neck, with the effect of giving exit to grumous pus mixed with serum. Poultices, and subsequently onguent de la mère. Some serum discharged from the opening, which became fistulous on the 13th. A large blister was applied to the tumour of the breast. The occurrence of severe diarrhœa compelled us to suspend the preparation of iron which he was taking twice daily and to substitute tannin. Great appetite. Extraordinary diet.

17th.—The blister is dry; the tumour of the breast is spreading, and becoming softer.

The patient gets thinner, and his general condition is not

satisfactory. For some time past, on waking in the morning, there has been much perspiration on his face and the top of his chest. He can no longer leave his bed. To take some of the syrup of the white poppy.

25th.—Sweats excessive both night and morning. Marked loss of strength. Skin more pale; eyes sunken; the abscess of the neck remains fistulous, and the mammary tumour spreads towards the axilla. The patient can no longer turn in his bed.

Four days later he was unable to raise his legs, especially the left. The right arm is more feeble than the other. The appetite diminishes. There is constipation, and pain in the belly. The pulse presents nothing remarkable.

March 3d.—The paralysis of the lower extremities extends to the bladder and rectum, and for long past there has been no action from the bowels. The abdomen is tense and painful. The general debility increases day by day. The paralysis seems to progress from below upwards, and the superior extremities have long lost their power. The muscular system alone is affected. Sensibility is preserved in all the paralysed parts. There is almost complete loss of appetite.

20th.—The patient seems somewhat improved; the bladder has recovered its tone. The bowels have been freely moved, and the appetite is better. The strength seems to have returned somewhat in the arms and hands, but notwithstanding, the general debility advances. The skin over the sacrum has become red, and threatens mortification. There is a fresh abscess in the left lumbar region.

April 2d.—There is extreme emaciation. The intellectual powers are perfect, and the spirits good. The patient has no idea that his end is approaching. The tumour of the breast has almost disappeared. The sensation continues perfect.

The legs and feet begin to be œdematous. For some time past the patient has complained of pain and pricking in the pelvic extremities. There is an eschar as large as the palm of the hand penetrating to the bone.

21st.—There is a sense of suffocation, and pain in the side. The lungs are affected, and there is a sub-crepitant râle. The body is merely a skeleton covered with skin. The legs and thighs are œdematous, and nearly double their usual size. The hands also begin to be swollen. The contents of the bladder and bowels escape involuntarily. Sensation is preserved. The

arms can still be raised, but the hands can no longer grasp. The heart, although feeble, can be seen to move under the thin thoracic parietes, and gives rise to a wave in the abscess of the breast which has almost subsided.

22d.—The patient died, at 3 o'clock p.m.

23d.—*Post-mortem examination.*—The brain is sound. There is some serum in the ventricles. The abscess in the breast contains about eight ounces of white, creamy, thick pus; its anterior boundary is formed by the skin, and by some pale fibres of the pectoralis major. The cavity which extends towards the axilla, has for its exterior boundary the intercostal muscles and ribs. By the destruction of some parts of these muscles, between the second and third ribs in front, the abscess sends a prolongation beneath the sternum, and in the midst of this prolongation, an adhesion between the visceral and parietal pleuræ prevents the pus from spreading into the cavity of the chest.

Chest.—The lungs are engorged at their base, and especially behind. There is some lobular pneumonia at the base of the right lung. No tubercles in any part. The top of the left lung is intimately adherent to the parietes of the thorax. The heart is flask-shaped, pale, small, and contains some softish clots. The other viscera are sound. The spleen, which was somewhat large, tears more readily than usual.

The veins of the inferior extremities, the iliac veins, and the vena cava, up to where it passes behind the liver, are filled with old yellow, brown, fibrinous clots, adherent to their walls, which themselves are strongly adherent to the sheath and cellular tissue of the neighbourhood, which is indurated and thick.

In the left lumbar region is a vast fluctuating depôt, which contains more than a pint of white, creamy, well-concocted pus. Limited below by the brim of the pelvis, and behind by the vertebral column, this abscess passes upwards underneath the last rib, which is carious upon all its anterior surface, and subsequently, it passes behind to the first, which is floating, and also carious in part of its posterior surface. The anterior wall of the abscess is formed by the peritoneum, the fascia propria of which is thick. The pus has commenced to spread below into the pelvis, beneath the iliac fascia.

Spinal canal.—On a level with the fifth, sixth, and seventh cervical vertebræ, and with the first and second dorsal, is a layer of plastic, grumous, grayish-yellow, tuberculous matter, or in-

spissated pus. It is somewhat more than a line in thickness, pretty intimately adherent in front to the great posterior cervical ligament, and behind to the dura mater, but is limited by the lateral vertebral foramina, except on a level with the fifth and sixth cervical vertebræ, where a small elongated mass of the same material lines the lateral parietes of the left side of the canal, and the corresponding part of the dura mater. The cord itself, though compressed in front by this effusion, is healthy. The left transverse processes of the sixth and seventh cervical vertebræ are in parts laid bare, and are bathed in the pus of a collection which in one part communicates with the lateral mass on the left side of the spinal canal, and in the other, with the abscess which was opened when the patient came into the hospital, and which became fistulous.

CHAPTER II.

INDURATIONS.

An induration, with hypertrophy, slightly irritating the mamma, occurs pretty frequently previously to puberty, both in the girl and boy. I have met with it mostly towards the age of fifteen, sometimes at ten and twelve, and sometimes at sixteen and eighteen, but always in those in whom the system or the sexual functions were as yet imperfectly developed. This affection is met with in practice in two tolerably distinct forms, acute and chronic. The acute form, by far the most common, is indicated by itching, and heat, and often by dull wearying pain in one of the breasts. The nipple projects more than usual, and the colour of the areola is markedly increased; the gland itself is thick, and, as it were, raised up; to the touch it is hard, bossilated, large, moveable, hot, and painful, the seat of inflammation, which may give rise to abscess, as will be spoken of presently.

In short, this irritation is scarcely anything else but the first phase of inflammation of the breast, properly so called. It yields readily to topical emollients and moderate local or general bleeding.

In a chronic form, the affection hardly differs from acute irritation, except in the absence of pain, sensibility, and an inflammatory colour. The mamma is then hard, irregular, thick, and moveable, as in the preceding form, but not painful, except upon tolerably firm pressure. In this form, the induration somewhat resembles the induration of scirrhus, and I have on several occasions seen it treated for this disease, even by eminent practitioners.

A young man, æt. 17, had been affected with this sort of irritation for four months. By the employment of the extract of hemlock internally, and carrot poultices externally, as well as of the Emplâtre de Vigo, the patient got well in the space of two months, and his attendant was convinced that he had thus cured a cancerous tumour of the breast. In these cases, the whole of the mamma is usually affected. The tumour is distinguished

from scirrhus by the absence of any adhesion to the skin, and by its having no tendency to retract the integuments. It is elastic, and somewhat flexible, instead of being strong and incompressible. In short, by the aid of a little reflection, it is easy to distinguish it from scirrhus and encephaloid.

These indurations of the male mamma yield, in the course of a few weeks, to the ordinary antiphlogistic or revulsive remedies. Bleeding from the arm, if there be no contra-indication in the condition of the constitution, a small number of leeches applied for two or three times, at intervals of a week, around the seat of tumefaction, and purgatives, and bitters, if there be any remaining irritation, will pretty rapidly get rid of this affection.

Most frequently, indeed, simple topical applications will suffice, such as linseed poultices, in decoction of marsh-mallow, or in goulard-water, or in red wine, according to circumstances. Friction with mercurial ointment or the iodide of lead may also be usefully resorted to. Well-applied compression may be indicated, and M. H. Larrey has met with great success in its employment.[1]

In some cases, also, the affection, both in the girl and boy, will disappear spontaneously as the patient grows older, on the occurrence of puberty. The surgeon may therefore assuage the apprehension of the parents and the patients themselves, who in such cases usually alarm themselves beyond measure.

[1] Robelin, 'Thèse,' 1852, No. 32, p. 19.

CHAPTER III.

CYSTS.

Cysts in the male mamma are so rare that but few cases of the kind have been published. For my own part, I have met with but three examples. The most remarkable was of the size of a child's head, had been developed without known cause, without pain or previous inflammation, and had attained the dimensions pointed out in less than a year. It occurred in the person of a young peasant, of fifteen years of age, and occupied the external half of the right breast. Its parietes were thin, destitute of unnatural colour, and traversed by varicose veins.

At first, these tumours give the idea of a plump, firm mamma, as is often seen in the natural condition in young girls from fifteen to twenty. The transparency in this case was equally manifest as in a hydrocele of the same size. Puncture gave exit to six ounces of light yellow serum. I injected a solution of tincture of iodine in water, and six days afterwards I applied the same treatment to a swelling which had appeared at the external and upper part of the primary tumour. Everything proceeded as in a case of hydrocele, and the agglutination of the parietes of the cyst was complete in three weeks.

My other two cases did not differ from the preceding, except in the somewhat smaller size of the tumour, and in the age of the patients, one of whom was older, the other younger. In other respects the treatment and the cure were the same. Such then is the treatment that should be adopted in the case of unilocular cysts in the male mamma. If others of a different kind make their appearance, they should be treated in the same way as in the female (see p. 254).

CHAPTER IV.

TUMOURS.

I HAVE not met with more than one case of adenoid tumour in the male. The following are the particulars :

Adenoid tumour of the shape of a cauliflower in a man aged 85. *Tumour destroyed by ligature; cure.*—M. D—, officer of health, formerly an army-surgeon, begged me to attend him for a disease of the breast with which he had long been troubled. I was at first sight surprised by the smell and appearance of the disease. It was in the left breast, and consisted of a large mass, about six inches in circumference, lobulated or granulated like a cauliflower, of a dirty gray or slightly reddish colour, and from which exuded a semi-purulent ichor. The tumour was divided deeply by fissures nearly to where it was adherent to the thorax, so that it seemed as if formed of several vegetations glued one against the other. All these parts, however, were lost in a single root about one inch and three fifths in thickness, situated on the mammary region. The mass, presented the elasticity and the density of an adenoid tumour and not the softness or fungous and medullary consistence of an encephaloid growth. The patient, in whom it had existed for fifteen years, and had been ulcerated for three, was however much less alarmed, on account of the slight pain, than from the discharge and disagreeable odour attached to it. At his advanced period of life, he was but little inclined to undergo an operation with the knife, and I myself hardly urged the employment of such an instrument; and we therefore agreed that a ligature should be thrown around the root of the tumour, and tightened every day by means of Dessault's instrument. The fungus became detached in the space of a fortnight, and in three weeks the wound was healed. M. D— survived four years, without anything further having occurred in his breast; and died of a disease unconnected with this mammary tumour.

Epithelial and butyrous tumours are still rarer. The only class of tumours that I have seen were either hypertrophic or inflammatory indurations, or the cysts spoken of above.

SECTION II.

DISEASES OF MALIGNANT OR CANCEROUS NATURE.

Up to the year 1839, I had not met with any other form of cancer in the male breast than scirrhus. Bertholin,[1] who speaks of the extirpation of the male breast; M. Sédillot,[2] who narrates two cases of the kind; M. Petrequin, who, on visiting Padua, learned that the mamma of an adult male had been extirpated in that town; all make use of the word scirrhus to designate the tumour which had necessitated the operation. There are also two examples in the work of Dr. Warren,[3] but his cases are narrated in a manner which leaves some doubt as to the real nature of the disease.[4] Dr. Walsh believes that cancer in the male mamma is always scirrhous.[5]

For my own part, I have met with nine or ten examples of these cancers, one of which left me in some uncertainty as to whether the tumour was not rather fibro-plastic than scirrhous. Moreover, I am acquainted with several cases of true encephaloid in the male mamma. In one instance, the tumour, which had not undergone ulceration, was as large as the two fists, and existed in a man fifty-two years of age, had commenced to soften in one of its principal masses.

A man, æt. 48, who consulted me in the year 1850, had his left breast occupied by large cerebriform masses, at the same time that his axilla was filled with similar tumours not ulcerated.

In the year 1847, I had to extirpate an ulcerated cancerous mass from the axilla of a man who, eighteen months previously, had been operated on for a large encephaloid tumour of the mamma.

In 1851 I saw, with Dr. Vignolo, a clergyman whose right mamma was also the seat of an ulcerated fungous cancer, excavated, and four inches in size, which had been treated and cured

[1] 'Presse Médicale,' vol. i, p. 140.

[2] Bonnet, vol. iv, p. 451.

[3] 'On Tumours,' p. 282.

[4] One of Dr. Warren's cases is tolerably fully detailed, but respecting the other no particulars are given.—Ed.]

[5] Dr. Walshe's words do not exactly convey this meaning. They are as follows: "Cancer of the male breast is commonly of the scirrhous species; colloid has certainly not been observed in this situation, and of encephaloid the examples are very few." (Walshe on 'Cancer,' p. 485.—Ed.]

by the caustic with sulphuric acid. M. Vidal[1] also extirpated a tumour of the kind from a patient under my care in La Charité, and M. Bérard[2] met with two examples upon the same day, at the central office for hospitals. Blandin,[3] M. Dequise,[4] and M. St. Larrey,[5] have also met with cases of the kind. This is sufficient, it appears to me, to show that the male mamma is subject to the different varieties of cancer as well as the female mamma, although less frequently. It should be added, that cancer of the mamma is also possible in children. Carmichael[6] states that he met with scirrhus in both mammæ in a child twelve years of age.

At the present time, I am unable to affirm, as I did formerly, and as has been believed by others, that cancer in the male breast neither tends to become disseminated, nor to increase in size, nor to be reproduced in the viscera, as in the female, for since that time I have had several occasions to observe the contrary. Thus, a patient operated upon by M. A. Bérard, in whom there was a return of the disease in the axilla, died of general cancerous infection after being operated upon by me for axillary cancer. I have already stated, also, that several of the patients had cancerous tumours in the axilla, and even above the clavicle.

I am, however, still inclined to believe, that the extirpation or destruction, by caustics, of cancer in the mamma, affords a better chance of success in the male than in the female.

In addition to the cases of permanent cure, which I published in 1839, I may now add two others out of five operations. Excepting in these differences, cancer of the breast proceeds in the male just as in the female, and requires, therefore, to be submitted to the same treatment, and to the same precautions. In the one as in the other, cancers are forms of tumour which never get well spontaneously, which, if left to themselves, inevitably terminate fatally, and which should therefore be extirpated as early as possible.

The following is a case, the notes of which I took more than thirty years ago, which shows that in the male breast, as in the

[1] Pathologie Chirurg., vol. iii, p. 811.
[2] 'Thèse de Concours,' 1842, p. 145.
[3] Lebert, 'Physiol. Pathol.' vol. ii, p. 317.
[4] 'Gazette des Hôpitaux,' Dec., 1850.
[5] Robelin, 'Thèse,' p. 26.
[6] Walshe, 'On Cancer,' p. 471.

female, certain tumours having a cancerous aspect, may prove of very embarrassing diagnosis.

Tumour mistaken for cancer, and probably simply a chronic abscess; extirpation; cure.—Teisse, æt. 44, a gardener, of strong and sound constitution, and who had never been seriously ill, twenty months ago struck his right breast against a cask. The accident was not at first followed by any unpleasant symptoms, but a fortnight later, the patient noticed a tumour, of the size of an egg, in the place where the blow had been received, which he altogether neglected. When he entered the hospital, in Feb. 1820, there was on the right half of the thorax a tumour of the size of the head of an adult. It was bossilated, and toward the base presented some elevations, which advanced towards the eighth and ninth ribs. In the interval between the bosses, the substance appeared softened, but the skin was perfectly sound, and unadherent at any point. Towards the axilla there was a projection bounded by the inferior border of the pectoralis major and sternum, which was depressed, so that at first sight one would have said that the tumour formed one body with this part of the thorax. Nevertheless, on closer examination, it became apparent that it was distinct, and situated entirely amidst the soft tissues. As shooting pains had been felt in it for some days, and the general health was good, the operation was proposed and practised on Feb. 22d.

The tumour was adherent to the ribs and intercostal muscles, where some portions were left behind.

The right arm, which had been swollen, soon regained its usual size; the pulse grew stronger, and the appetite returned towards the 12th of March. On the 15th, some hard spots were found in the lips of the wounds, which were adherent, and in some places cicatrized. Suppuration continued abundant. On the 24th, some reddish, soft, indolent, purely cellular vegetations made their appearance, but gradually became depressed and eventually disappeared. The patient left the hospital on April 25th in good health, and very happy at being relieved from his tumour.

This tumour, which Bougon had taken for cerebriform cancer, left some doubts in my mind as to its real nature, for there is in my notes a paragraph in which I speak as follows:

"Union by adhesion was attempted. In the course of the

day there was some oppression of the chest; the pulse is small; the countenance pale.

"25th. The patient is well, and there is no fever.

"26th. The first dressing was proceeded with. There is little suppuration, and the lips of the wound have united to a considerable extent. However, there was a slight erysipelatous tinge in the neighbourhood, which continued to the 1st of March; and it was then found that pus had accumulated under the flaps, the lips of which had in some parts become grayish. The pulse was scarcely perceptible on the right side, and very feeble on the left, although the patient continued pretty well.

"The abscess presented itself between the lips of the wound on the 29th, and the pus, which was at first serous and floeculent, by degrees assumed a healthy aspect. The tumour then may be an abscess, the matter of which is decomposed and altered. If it be not a cancer the patient will recover. If it be encephaloid, the cancer will be reproduced in the viscera, and the patient will die."

Another paragraph shows the description I gave of it, which was as follows: "The tumour is of cerebriform nature, at least it presents most of the characters of that disease, but it also contains colloid matter, which is fluid in some parts, crude in others." I finally added, "was not this a vast abscess?"

In short, the diseases of the male breast too closely resemble the diseases of the female breast, and the affections of other regions of the body, to require a longer notice or more numerous details.

PART III.

DISEASES OF THE MAMMA IN NEW-BORN CHILDREN AND INFANTS.

Certain varieties of mammary affections peculiar to new-born children, and to young infants, must here be mentioned. Accoucheurs frequently meet, some days after birth, with an engorgement and strange sort of tumefaction of the breast. The whole mammary region swells and becomes the seat of tolerably acute pain, but at a later period, this trifling inflammatory affection disappears of itself. On other occasions, however, the symptoms continue, the inflammation increases, and the case terminates in abscess. The strange part of it is, that the disease, up to a certain point, proceeds like lactiferous inflammation of pregnant women, or those who have been recently confined. Mr. Birkett,[1] who states that in young children, in which the mammæ are swollen, there often exists at the same time a vaginal discharge, also narrates a case of abscess in the breast of an infant twenty-five days old, preceded by secretion of milk in both glands, which occurred to Mr. Wagstaff in the year 1800. Mr. Birkett himself saw an abscess in the mamma of a child [2] three months old.

A milky discharge will often issue from the nipple on pressure. I have sent some of this liquid to M. Donné, who examined it microscopically, and told me he had verified in it all the constituents of milk. Chemical analysis confirmed also in all points the testimony of the microscope.

New-born children, then, may be affected with a sort of milky engorgement similar to that seen in nursing women, and it is, consequently, necessary to submit them to the treatment described in the article on inflammations of the mamma and inspissation in general. The ammoniacal belladonna liniment, poultices emollient and resolvent, according as there is more or less irritation, are then the principal remedies to be employed; and there is the less occasion to think of resorting to bleeding, as the disease has a marked tendency to terminate of itself by resolution.

[1] 'Diseases of the Breast,' London, p. 11.

[2] Op. cit., p. 15.

In confirmation of the preceding observations, which were made as far back as 1839,[1] I can now refer to the work that M. N. Guillot has just presented to the Academy.[2] The researches of this gentleman prove, 1st, that instead of being an accident or an exception, the secretion of milk is the rule in new-born children; 2d, that the phenomenon occurs equally in boys and girls; 3d, that it takes place after the fall of the umbilical cord, from the 8th to the 17th day; that sickly children are not alone subject to it; and that inflammation and abscesses are more frequently the consequence than the cause of it.

I have never met with hypertrophy, either general or partial, nor with adenoid tumours, nor with cancer of the mamma in new-born children. The same observations would apply to these tumours, as in the case of their occurrence in the female, and it is therefore superfluous to treat of them at greater length, or to devote to them a special chapter.

[1] 'Dict. de Méd.,' vol. xix, p. 104.

[2] Académie des Sciences ('Comptes Rendus,' vol. xxxvii, p. 609).

THE END.

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